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JOURNAL OF ARIZONA MEDICAL ASSOCIATION

MEDICAL SOCIETY OF THE UNITED STATES AND MEXICO

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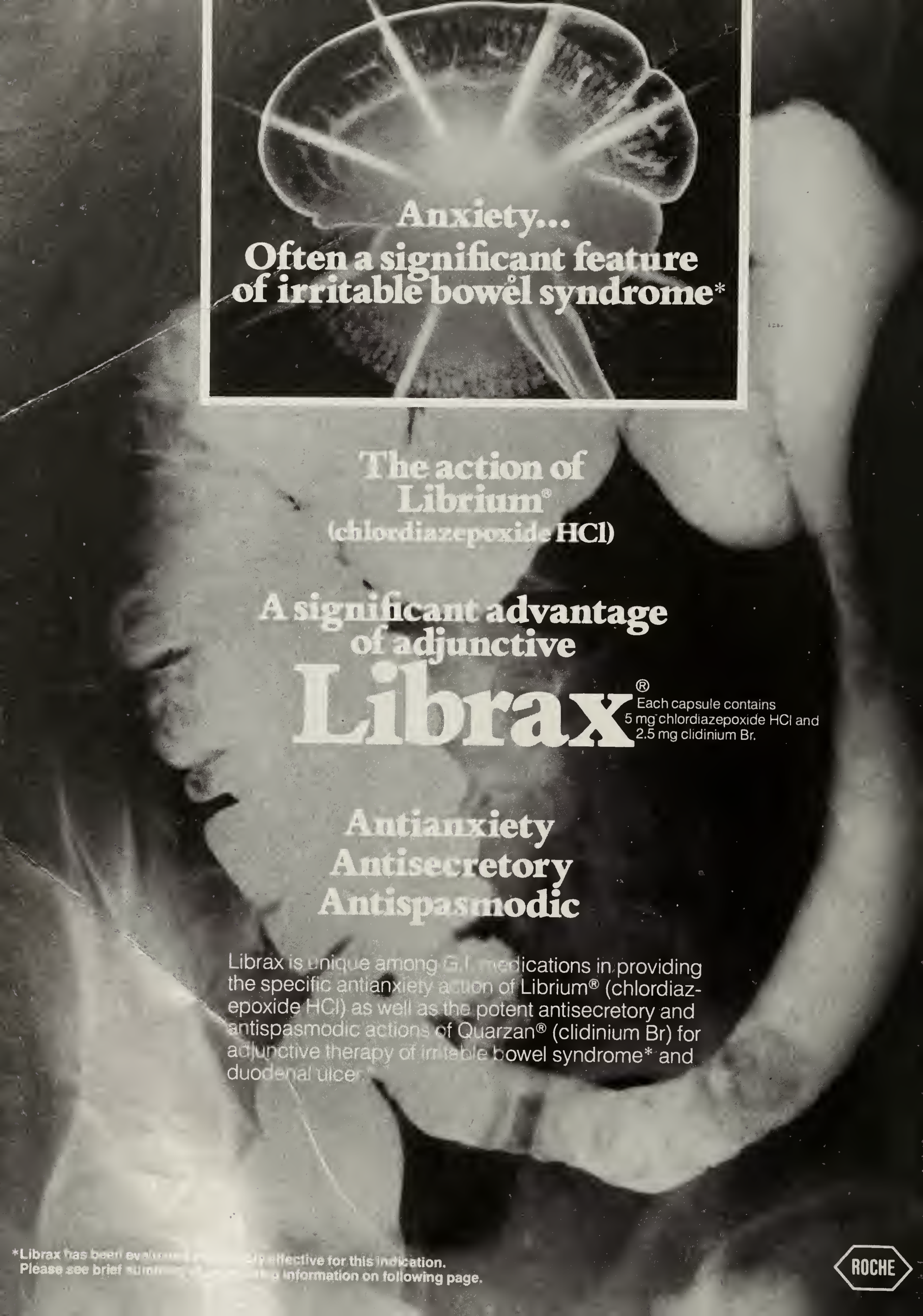

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Bacteriologic studies to determine the causative organisms and their sensitivity to cloxacillin sodium should be performed.

Important Note: When it is judged necessary that treatment be initiated before definitive culture and sensitivity results are known, the choice of cloxacillin sodium should take into consideration the fact that it has been shown to be effective only in the treatment of infections caused by pneumococci, Group A beta-hemolytic streptococci, and penicillin G-resistant and penicillin G-sensitive staphylococci. If the bacteriology report later indicates the infection is due to an organism other than a penicillin G-resistant staphylococcus sensitive to cloxacillin sodium, the physician is advised to continue therapy with a drug other than cloxacillin sodium or any other penicillinase-resistant semi-synthetic penicillin.

Recent studies have reported that the percentage of staphylococcal isolates resistant to penicillin G outside the hospital is increasing, approximating the high percentage of resistant staphylococcal isolates found in the hospital. For this reason, it is recommended that a penicillinase-resistant penicillin be used as initial therapy for any suspected staphylococcal infection until culture and sensitivity results are known.

Cloxacillin sodium is a compound that acts through a mechanism similar to that of methicillin against penicillin G-resistant staphylococci. Strains of staphylococci resistant to methicillin have existed in nature and it is known that the number of these strains reported has been increasing. Such strains of staphylococci have been capable of producing serious disease, in some instances resulting in fatality. Because of this, there is concern that widespread use of the penicillinase-resistant penicillins may result in the appearance of an increasing number of staphylococcal strains which are resistant to these penicillins.

Methicillin-resistant strains are almost always resistant to all other penicillinase-resistant penicillins (cross-resistance with cephalosporin derivatives also occurs frequently). Resistance to any penicillinase-resistant penicillin should be interpreted as evidence of clinical resistance to all, in spite of the fact that minor variations in *in vitro* sensitivity may be encountered when more than one penicillinase-resistant penicillin is tested against the same strain of staphylococcus.

Contraindications: A history of a previous hypersensitivity reaction to any of the penicillins is a contraindication.

Warning: Serious and occasionally fatal hypersensitivity (anaphylactoid) reactions have been reported in patients on penicillin therapy. Although anaphylaxis is more frequent following parenteral therapy it has occurred in patients on oral penicillins. These reactions are more apt to occur in individuals with a history of sensitivity to multiple allergens.

There have been well documented reports of individuals with a history of penicillin hypersensitivity reactions who have experienced severe hypersensitivity reactions when treated with a cephalosporin. Before therapy with a penicillin, careful inquiry should be made concerning previous hypersensitivity reactions to penicillins, cephalosporins, and other allergens. If an allergic reaction occurs, the drug should be discontinued and the patient treated with the usual agents, e.g., pressor amines, antihistamines, and corticosteroids.

Safety for use in pregnancy has not been established.

Precautions: The possibility of the occurrence of superinfections with mycotic organisms or other pathogens should be kept in mind when using this compound, as with other antibiotics. If superinfection occurs during therapy, appropriate measures should be taken.

As with any potent drug, periodic assessment of organ system function, including renal, hepatic, and hematopoietic, should be made during long-term therapy.

Adverse Reactions: Gastrointestinal disturbances, such as nausea, epigastric discomfort, flatulence, and loose stools, have been noted by some patients. Mildly elevated SGOT levels (less than 100 units) have been reported in a few patients for whom pretherapeutic determinations were not made. Skin rashes and allergic symptoms, including wheezing and sneezing, have occasionally been encountered. Eosinophilia, with or without overt allergic manifestations, has been noted in some patients during therapy.

Usual Dosage: Adults: 250 mg. q.6h.

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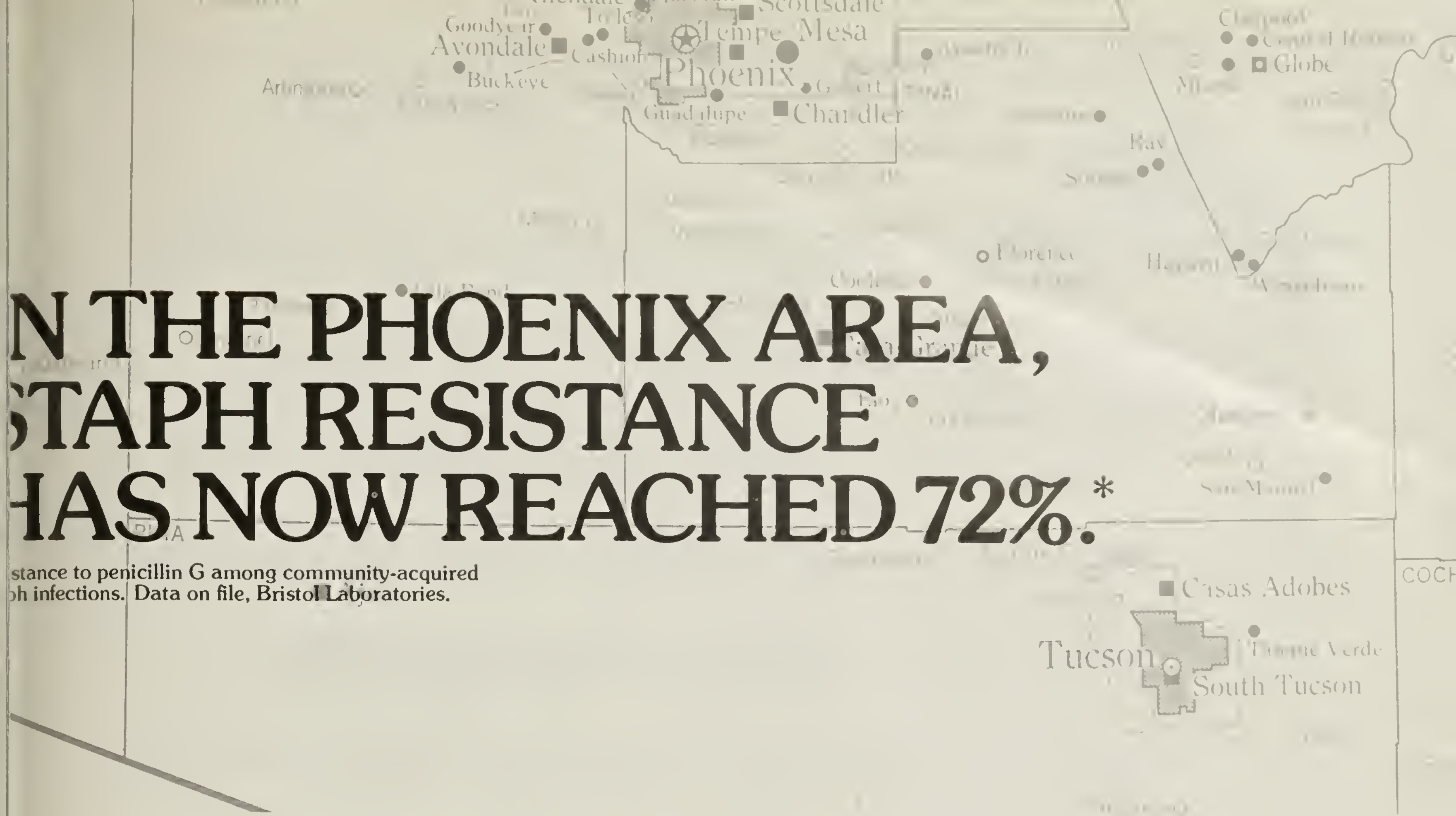

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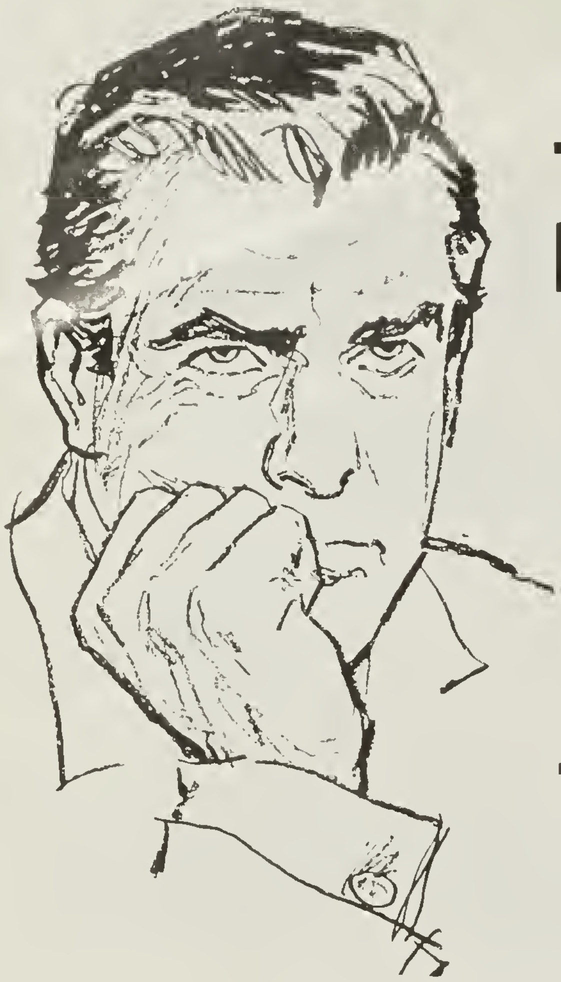

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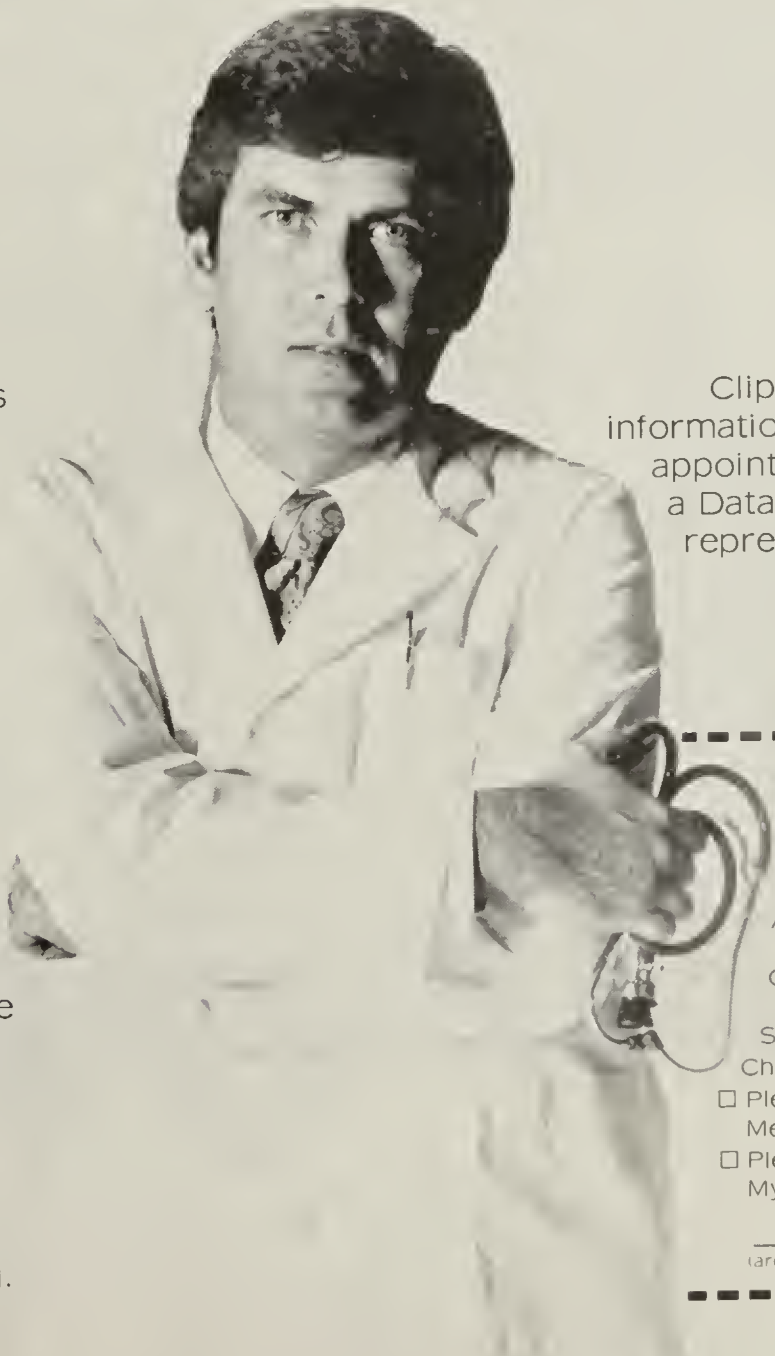

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NEWS LETTER

VOL. 18, NO. 1, MAY, 1978

AUTOMATIC BLOOD PRESSURE DEVICES

A Chicago Department of Health report on the Vita-Stat automated blood pressure machines concludes that their consistency and accuracy is sufficient for screening purposes.

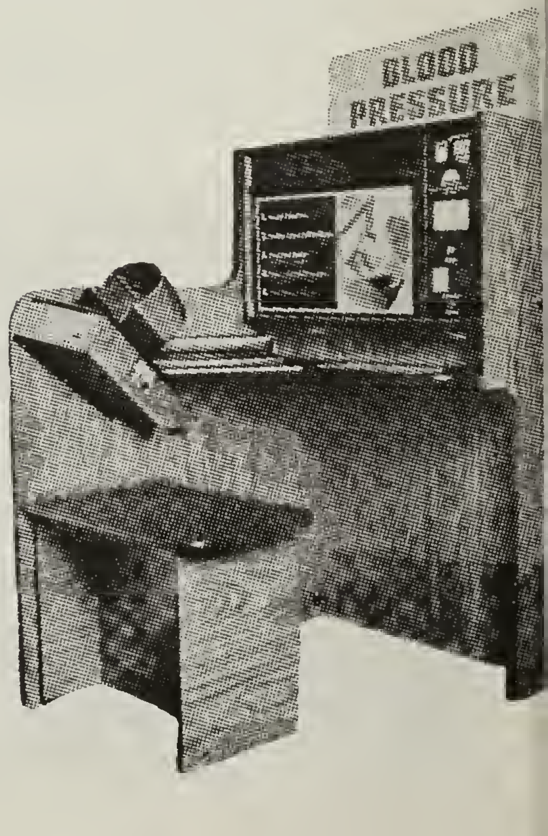
The report, the first in the nation based on a scientific study by a public agency, was prepared under the direction of Dr. David M. Berkson, the Department's heart disease control officer. It consists of (1) a statistical evaluation by Drs. Shekelle and Raynor of Rush-Presbyterian St. Luke's Medical Center, based on data collected over a four month period by Lawrence Shireman and Thomas Whipple and their co-workers in the Health Department, and (2) an evaluation of the results with recommendations for regulatory actions if deemed necessary. The report notes at the outset that any assessment of automatic blood pressure devices must compare their measurements with measurements by trained observers recorded by the traditional cuff ausculatory method. Since blood pressure may vary rapidly, the assessment of accuracy of measurement is difficult.

"In our evaluation of the Vita-Stat machine," the report states, "we found that, when the machine and a trained observer measure blood pressure simultaneously, there is a very good agreement." It is essential, however, that a machine must perform well in sequential measurement with trained observers as well as in simultaneous measurement. In sequential measurement the machine, in general, has a fair degree of accuracy. It does not perform as well, however, as trained technicians. In the laboratory analysis of the comparison between one machine and several technicians the machine tended to read systolic pressure 3.4mm higher and diastolic pressure 2.3mm lower. In the field analysis the machine tended to read systolic blood pressure 1.5mm and diastolic pressure 0.5mm higher than the technicians.

Although agreement between technicians in mean blood pressure measurement and in categorizing persons as normal, borderline or hypertensive tends to be closer than technician-machine agreement, these differences are small and of little practical significance in screening.

The report recommends that if licensing is insituted by the City of Chicago, periodic recalibration and testing should be required. The public must be informed that these instruments serve merely as screening devices; that they do not replace medical consultation and that, because blood pressure is subject to variation, several elevations or lack of elevations do not constitute a diagnosis of hypertension or normotension.

Blood pressure readings must be interpreted by a qualified medical professional and self-adjustment of medication based on automated blood pressure readings without medical supervision may be dangerous. The report concludes "that although the Vita-Stat machine does not perform as well as trained technicians, its consistency and accuracy is sufficient for screening purposes."



Seminars in Chest Medicine

Pulmonary Function Tests

Brendan D. Thomson, M.D.

Editors:
Robert J. Clark, M.D.
Lynn M. Taussig, M.D.
William C. Weese, M.D.

The purpose of this discussion is threefold: first, to discuss the uses of pulmonary function tests; second, to describe the ones in common clinical use; and third, to indicate their limitations.

Uses

Pulmonary function tests can be done as part of a baseline evaluation of a patient, to follow his course over time, or to gauge his response to therapy. They are intended to answer the following questions for the clinician: Is airway disease present? What type is it? Is it reversible? Can the patient's symptoms be explained on a pulmonary basis?

Diagnostic Purposes

The diagnostic purposes include the screening of asymptomatic people in population surveys or the evaluation of patients with symptoms in order to determine the type and extent of their pulmonary abnormality. Into this latter category would come the initial testing of office or hospital patients with pulmonary problems; pre-operative evaluation of surgical patients with a history of cigarette smoking, chronic cough, wheezing, or dyspnea; and in disability evaluation of workers who have developed respiratory symptoms related to an occupational exposure. In all of these clinical situations, if an abnormality to flow is present on the spirogram, a bronchodilator (usually isoproterenol) is administered via a small volume nebulizer in order to gauge the degree of immediate reversibility.

In deciding which pulmonary function tests to order, the general principle is to do the easiest test, or routine spirogram, first. Lung volumes or a diffusion capacity may be done second, if indicated. On occasion, some form of exercise test may be required to complete the evaluation. However, this is not a routine pulmonary function test and will not be discussed here.

Therapeutic Assessment

The other important use of pulmonary function testing is to evaluate patients over a period of time; either for prognostic reasons, or more importantly, to measure their response to therapy. Controversy exists as to which test or tests to follow. However, it is generally agreed that in those diseases that are characterized by a fall in a FEV$_1$ and the FEV$_1$/FVC ratio (asthma and exacerbations of chronic bronchitis), the FEV$_1$ is as sensitive and as selective as the more complicated tests. In such cases it would be appropriate to follow the FEV$_1$ alone. In addition to the FEV$_1$, some physicians will follow the peak flow rate. This is especially useful in outpatients as it can be done by the patient himself at home and a flow sheet kept to be reviewed by the physician at each office visit.

In those diseases characterized by restriction (interstitial fibrosis or sarcoidosis), the diffusion capacity for carbon monoxide is the most sensitive test. However, it is not available in all hospitals and is more costly than the spirogram.

The Common Pulmonary Function Tests

The most commonly used pulmonary function tests are the spirogram and lung volumes. A spirogram (Figure 1) is performed by having the patient inspire fully and blow out as fast as possible to full expiration. The volume of air that the patient expires is collected in a spirometer and

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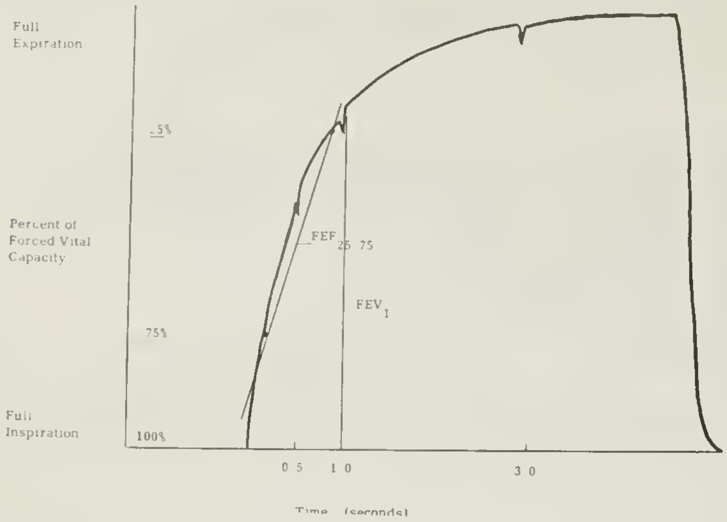

FIGURE 1
Normal Spirogram

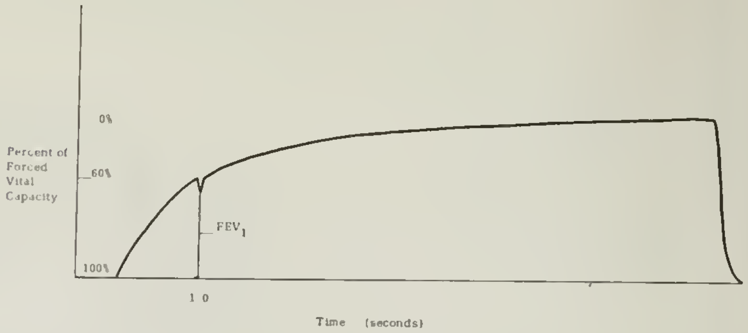

FIGURE 2
Abnormal Spirogram demonstrating an obstructive pattern or decrease in the FEV_1/FVC ratio. Whether or not the FVC is decreased is determined by comparison with normal controls.

plotted against time on graph paper. From this time-volume curve, measurements are made of the total amount of air the patient expired or forced vital capacity (FVC), as well as the amount expired in the first one second (FEV_1). These two measurements are also expressed as a ratio, FEV_1/FVC.

If the forced vital capacity is normal, then any lowering of the FEV_1 is called obstruction. The degree to which it is lowered indicates the degree of obstruction. If the forced vital capacity is lower than predicted, but the FEV_1/FVC ratio is greater than 70%, restriction is present. The degree to which the FVC is lowered indicates the degree of restriction. If the FVC and the FEV_1/FVC ratio are both lowered, obstruction alone or combined obstruction and restriction could be present, and lung volumes are required in order to make the differentiation. (See below.)

Other individual points or relationships on the spirogram can be studied, but, in general, they yield only a small amount of additional information. An exception is the slope of the line connecting 25% and 75% of the FVC. This line is termed the forced exiratory flow 25-75, or the FEF_{25-75} and is expressed in liters per second. It may be the first value to be decreased in early obstructive airway disease.

Other pulmonary function tests performed with the spirogram are the maximum voluntary ventilation (MVV) and the peak flow rate. The MVV is the maximum amount of air that the patient can exchange over a short period of time. It is expressed in liters per minute. Normally it is approximately 35 times the value of the FEV_1. Lowered values are seen in disease states resulting in neuro-muscular weakness and, easy fatigue as well as obstructive disease. A decreased value may indicate poor patient cooperation. The peak flow rate is an instantaneous measurement of maximum flow generated by the patient during forced expiration. The test is easy to perform and requires only a hand-held peak flow meter. It is useful to follow in individual patients when frequent measurements are required. Results can be manipulated by the patient, and a decreased value is non-specific.

Lung volumes measurements of the volume of gas within the lungs at full inspiration or total lung capacity (TLC), the end of a quiet expiration or functional residual capacity (FRC), and at the end of a forced expiration or residual volume (RV). Only one of these points is measured and the others are calculated from a slow vital capacity. Because of convenience and reproducibility, the FRC is measured. FRC can be measured by body plethysmography or gas dilution technique. The gas dilution technique using nitrogen wash out or helium dilution is used most frequently in clinical hospital laboratories. The helium dilution method utilizes a closed system and is based on the fact that helium is inert, insoluble, and remains within the alveoli.

Since the volume of the machine is known beforehand and the two concentrations of helium are directly measured, the patient's lung volume at FRC can be calculated. The time it takes for the helium to equilibrate between the machine and the patient is called the equilibration time and should be three minutes or less. A longer time indicates areas of poor gas mixing in the patient's lungs. Once the helium equilibrates within the machine-patient system, the patient is asked to fill his lungs and perform a slow vital capacity. From this maneuver, the total lung capacity and residual volume are calculated. These values are written as a ratio, RV/TLC where an increase in the ratio indicates air trapping within the lung. A diminished total lung capacity is called restriction, and the degree to which the TLC is lowered indicates the degree of restriction. A lowered TLC in restriction is usually associated with a lowered FRC and RV. An increase in these values is consistent with pulmonary hyperinflation. It should be remembered that these interpretations are physiological and should be assessed independently from the clinical and pathological terms of chronic bronchitis and emphysema.

In addition to spirometry and lung volumes, many pulmonary function laboratories perform a flow-volume loop (Figure 3a). While flow-volume loops offer a better visual representation of flow rates, only rarely do they yield additional information over spirometry alone. The exceptions are upper airway obstruction (Figure 3b), and measurement of instantaneous flow rates.

The fourth frequently used pulmonary function test is the single breath diffusion capacity of carbon monoxide

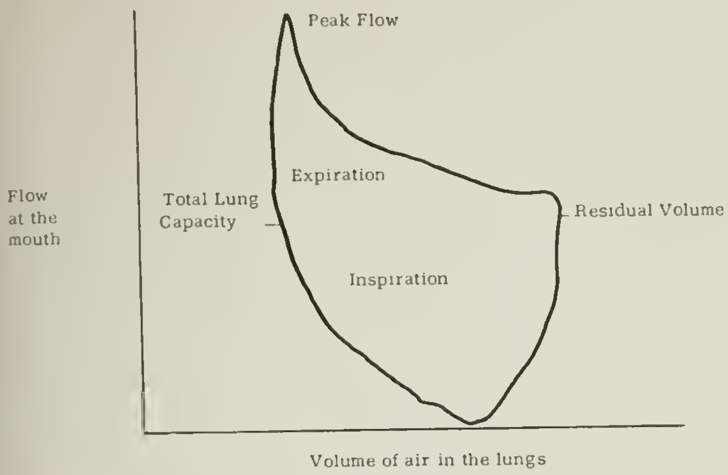

FIGURE 3a
Flow-volume loop. Same patient as in Figure 2. Note the concave-upward or "in" pattern of expiration.

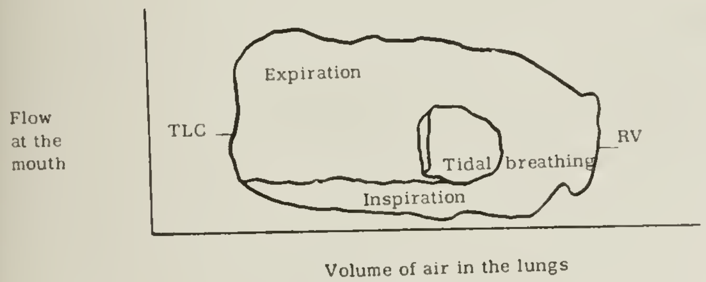

FIGURE 3b
Flow-volume loop of extra-thoracic upper airway obstruction. Note the flattening of both inspiratory and expiratory flow rates.

Table 1. Causes of an altered single breath diffusion capacity for carbon monoxide.

Increase
Physiological
- Exercise
- Pregnancy

Pathological
- Asthma
- Polycythemia
- Intrapulmonary hemorrhage

Decrease
Physiological
- None

Pathological
- Emphysema
- Multiple pulmonary emboli
- Pulmonary vasculitis
- Fibrosing alveolitis
- Sarcoidosis
- Anemia
- Loss of lung parenchyma due to surgery
- Compression of lung parenchyma due to pneumothorax or hemothorax.

(D_{LCO}).In theory, its performance is similar to that of lung volumes, except that carbon monoxide in a known concentration is added to the other gases in the system. Carbon monoxide, unlike helium, passes through the patient's lungs and is avidly taken up by the red blood cells. The amount of carbon monoxide that passes through the lungs in ten seconds is measured and compared to the change in helium concentration in order to determine the diffusion capacity. It was originally thought that a lowered diffusion capacity resulted from a thickened alveolar-capillary membrane, which is now known to play a minor role. The D_{LCO} is a measure of many factors including the amount of alveolar surface in contact with perfused capillaries. Table 1 lists the common causes of an altered D_{LCO}.

Limitations

There are several limitations inherent in pulmonary function testing. First, there must be a definition of normality. Pulmonary function laboratories vary in the control values which they use. These may have been drawn from surveys of asymptomatic Veterans Administration hospital patients (who may or may not have been smokers), rural non-smokers or urban non-smokers. Each laboratory defends its choice on the basis of sensitivity versus specificity, and each is appropriate provided that the ordering physician knows which set of controls are used in his laboratory. Another limitation is that individual patients vary widely so that routine pulmonary function tests do not always explain a particular patient's shortness of breath. Studies have correlated FEV_1 with survival; FEV_1 with CO_2 elevation; and FVC with exercise tolerance. However, these are statistical associations and may not be true for an individual patient. In these situations some form of exercise test or arterial blood gas with exercise is required in order to gain more information.

Finally, there is the question of the response to bronchodilators. If a response is seen to inhaled isoproterenol, the physician knowns that this bronchodilator can have a role in the treatment of his patient. It tells him that there is a degree of immediate airway reversibility and implies that similar adrenergic drugs should also be effective. However, if there is no response to the inhaled isoproterenol, then the decision to use any similar bronchodilator is more difficult. The decision to do so must be made on an individual patient basis and is guided by the following. 1) The patient who does not respond immediately to the inhaled isoproterenol may respond over time to an airway program which may include steroids, antibiotics, aerosol treatments, postural drainage, as well as regular inhaled bronchodilators. 2) A patient who does not respond to inhaled isoproterenol may respond to a different inhaled bronchodilator. Such individual variation in response will become even more pronounced when anticholinergic bronchodilators, such as, ipratropium bromide (SCH 1000) are introduced.

Spirometric results do not always correlate with an individual's exercise tolerance in everyday life. The patient may report that he feels better and can do more after using a bronchodilator and yet show no improvement on his forced spirometry. In such cases, it is the practice of most physicians to continue to prescribe a bronchodilator.

Seminars
in Endocrinology
and Metabolism

Hemoglobin Alc — A Promising New Method for Determining Long Term Control in Diabetes Mellitus

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Editors:
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Every physician who takes care of diabetics is faced with the dilemma as to what is good control. The literature is filled with controversy and disagreement occurs within the practicing community. One thing is for certain, diabetics develop rather severe long term complications. Hopefully, we as physicians can stop or at least slow the progress of these serious complications. Measurements of urine and blood glucose levels are the present methods for monitoring diabetic control over extended periods. These measurements are effective, but subject to many variables.

I suspect many of the readers will wonder if good control is essential in the treatment of diabetes mellitus. Everyone is acutely aware of the complications of diabetic ketoacidosis and hypoglycemia. These acute complications are directly related to the level of glucose. The controversy concerning good control revolves around the prevention of the serious, debilitating, chronic complications. The tragedy in diabetes is the relentless progress of blindness due to diabetic retinopathy and cataracts, renal failure due to nephropathy, amputations due to peripheral vascular disease, reduction of sexual function due to autonomic neuropathy, and painful extremities due to peripheral neuropathy. There are many physicians today who believe that controlling diabetes more accurately will slow the progress of these serious complications. If this is the case then we as physicians should attempt to control diabetes to the best of our ability.

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The easiest available method for determining good control requires frequent measurements of urine and blood glucose levels. Obviously glucose levels are affected by a whole host of factors such as activity, diet, stress, the amount of insulin and when it is taken. The level of glucose determines control for a specific point in time. To provide the most useful information, the blood and urine glucoses should be measured at a consistent time such as before meals and before the snack at night. Also, it would be advantageous that the urines be double voided. Even these measurements only partially reflect glucose control over a period of weeks or months.

Recently it has been shown that by measuring certain hemoglobins, the degree of control can be more accurately established over a prolonged period of time. In the normal adult hemoglobin A makes up about 90% of all hemoglobins. Minor hemoglobin components of hemoglobin A called hemoglobin A_{1a}, A_{1b} and A_{1c} are known to be elevated in diabetics. Under normal circumstances these hemoglobins make up about 7-8% of the total hemoglobins with hemoglobin A_{1c} making up 4-5% of the total hemoglobin. Most studies have shown a two-fold elevation of hemoglobin A_{1c} in diabetes with a mean of 10% of the total hemoglobin.[1,2,3] The cellular hemoglobin A_{1c} level remains constant throughout the 120 day life span of the erythrocyte. The exact mechanism of how and why hemoglobin A_{1c} is made has yet to be worked out. However, one of the hypotheses is that glucose undergoes a non-enzymatic addition to hemoglobin A.[3] The fact that hemoglobin A_{1c} is an irreversible product and since the level of glucose may play a role in the production of that particular hemoglobin, a marker may then be available for determining control of diabetes over a long period of time. Therefore, the periodic measurements of hemoglobin A_{1c} may provide a more objective assessment of diabetic control than had previously been possible.

There is the possibility that the production of hemoglobin A_{1c} is part of the genetic disorder of diabetes mellitus. However, chemically induced diabetic mice developed the same elevations in hemoglobin A_{1c} as did genetic diabetic mice.[4] This would suggest that the production of hemoglobin A_{1c} is related to the blood glucose and not to some inherited genetic property. Further support was brought out in Tattersall's study[5] of identical twins.

Hemoglobin A_{1c} was also found to be elevated in steroid induced diabetes and cystic fibrosis with diabetes.[6] Thus, even in secondary causes for diabetes mellitus elevations in hemoglobin A_{1c} are found.

Recent convincing studies in humans did show that controlling diabetes was reflected by lower levels of hemoglobin A_{1c}. In a study by Gabbay et. al.,[2] the levels of hemoglobin A_{1c} were found to diminish within 4 weeks in concert with 24 hour urine glucoses concentrations after good control was achieved. The maximum change in hemoglobin A_{1c} took place approximately 2 months after good control of diabetes. It is interesting to not that the 2 month period is approximately the half life of an erythrocyte. In an article by Koenig, et. al.,[3] he was able to show that the hemoglobin A_{1c} decreased 3-4 weeks following achievement of optimal blood glucose levels. Thus the single measurement of hemoglobin A_{1c} represents an integrated measurement of glucose level seen over a prolonged period of time.

Coronary artery disease occurs more frequently, especially in the younger patients with diabetes than in the non-diabetic population. Cholesterol levels and triglyceride levels are higher in diabetics than those in non-diabetics. Cholesterol and triglyceride levels in diabetic patients have been shown to be positively correlated with the hemoglobin A_{1c} levels.[2,7] This wets the appetite of those who believe that control of diabetes can halt the progression of macrovascular complications in diabetes mellitus.

Most of the chronic complications of diabetes reflect changes in the microvascular system caused by basement membrane thickening. An important question yet to be answered is; can good control of diabetes prevent these long-term complications such as nephropathy, retinopathy and neuropathy? With hemoglobin A_{1c} as a marker, studies can now be undertaken to help answer that question. Preliminary studies by Koenig have revealed no correlation between hemoglobin A_{1c} and basement membrane thickness. However, the final answer probably will not be in for quite some time.

The advantage of measuring hemoglobin A_{1c} when it becomes readily available is that it will allow the physician to evaluate the adequacy of diabetic control in an outpatient setting. Since the life span of the red cell is long and since the red cell hemoglobin A_{1c} level is irreversible then merely checking the hemoglobin A_{1c} every 2 months may allow for an accurate estimation of degree of diabetic control along with blood and urine glucose measurements. The usefulness of this test in the clinical setting needs further evaluation, but the outlook appears promising.

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Seminars in Gastroenterology and Liver Disease

Pseudomembranous Colitis

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INTRODUCTION

Pseudomembranous colitis is enjoying a renewed popularity in the medical literature. This is primarily due to a new hypothesis regarding the etiology and possibly the therapy of the antibiotic related form of this disease.

Pseudomembranous colitis deserves periodic mention in the medical literature because it is not a frequently encountered entity. On the other hand, it is important for clinicians to consider it in the differential diagnosis of patients who present with diarrhea for it is readily diagnosed and, generally, readily treated.

CLINICAL SETTING AND INCIDENCE

The most common setting in which pseudomembranous colitis is encountered is in the patient who has been treated with antibiotics. Those which have been implicated as leading to pseudomembranous colitis include clindamycin, lincomycin, ampicillin, tetracycline and others; the most commonly associated are clindamycin and lincomycin. The development of diarrhea with the use of these drugs does not mean that pseudomembranous colitis is present, as alteration of the bowel microflora may result in the symptom without the pathologic changes of pseudomembranous colitis. However, the entity should be considered and the patient proctoscoped to determine whether discontinuation of the antibiotic is indicated.

The other clinical setting in which this entity occurs is in the patient who has had abdominal surgery. This differs in that : 1.) Diarrhea is not so frequently present (approximately 50%.)2.) Peritonitis may occur concomitantly. 3.) The pathology may involve the small bowel as well as the colon.[1]

Beyond these twc major clinical settings, pseudomembranous colitis has been encountered with an increased frequency in patients who have acute intestinal illness; e.g., intestinal obstruction or ischemia and in those with more chronic, systemic illnesses; e.g., lymphoma, leukemia, chronic renal failure and congestive heart failure.

An interesting and unexplained feature regarding the incidence of the antibiotic related form of this illness is its geographic and time distribution. There have been several locales within the United States in which there has been a dramatic incidence of the disease in contrast to its uncommon occurrence elsewhere. Furthermore, this incidence has varied widely from time to time within a geographic area. The incidence of pseudomembranous colitis in clindamycin use has ranged from 0.1% to 10%.[2] This figure is, of course, influenced by how diligently patients are proctoscoped when diarrhea develops. The age of patients is worthy of note in that this entity is exceedingly uncommon in individuals less than 20 years of age. Additionally, a female to male ratio of approximately four to one has been reported by some observers.[1]

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ETIOLOGY

The etiology of pseudomembranous colitis remains in question. Hypotheses previously entertained have included staphylococcal infection, vascular insufficiency (from any one of a variety of causes) and altered bowel microflora. Thus far there has been no unifying etiologic concept for pseudomembranous colitis occurring in the variety of clinical settings as described above.

The most recent excitement has focused on the possibility of clostridia enterotoxin as an etiology in those cases which are antibiotic induced.[3] The clinical model for these studies has been the hamster which is exceedingly sensitive to clindamycin. Hamsters challenged with clindamycin, fecal extracts from other hamsters with pseudomembranous enterocolitis and fecal extracts from humans with pseudomembranous colitis will develop clinical disease. Additionally, cytotoxicity is observed with these extracts. When these extracts are then exposed to clostridia antitoxin no disease or cytotoxicity results. Furthermore, hamsters pretreated with vancomycin (effective against clostridia), do not develop disease. Various authors have implicated clostridia sordelli, others clostridia difficle as the culprit. Further work remains to be done to establish clostridia species as the agent in human disease. Furthermore, the efficacy of vancomycin awaits clinical trials in human subjects.

CLINICAL SYNDROME

The symptoms of pseudomembranous colitis are essentially a triad: fever, diarrhea and abdominal pain.[4] Fever is usually present in these patients and may be accompanied by leucocytosis. Most often the temperature is less than 102°, but there are exceptions. The diarrhea is typically watery and brown/green but rarely may be bloody. The abdominal pain is generalized, nonspecific and may be cramping in nature. The onset of the clinical syndrome is typically four to nine days after the onset of antibiotic therapy and two to five days in the post operative state. However, this is highly variable and it is important to consider the entity up to three weeks *after* discontinuation of antibiotics and one month after surgery.

The physical signs are nonspecific for this entity and include fever and generalized abdominal tenderness. However, when complications develop, further physical findings may include ascites, peritoneal signs and evidence of volume depletion.

If the disease is unrecognized and progresses without therapy, a host of complications may ensue. The most common is fluid and electrolyte imbalance secondary to fluid and protein loss within the gut. If this continues unmanaged, shock may result. If protein depletion is significant, ascites may rarely occur. Although the disease is typically localized to the mucosa and submucosa there are reported cases of toxic megacolon and perforation; hence, early diagnosis and management is crucial.

DIAGNOSIS

Patients suspected of having this syndrome should be quickly evaluated with sigmoidoscopy as the vast majority of cases have rectal involvement. It is the rare case that will require colonscopy for diagnosis. The sigmoidoscopic findings are typical for the disease and easily recognized.[2,4] An example is depicted in Figure 1. The usual appearance is of a scattering of yellow/cream plaque-like lesions which are not dislodged by swabbing (although they may be in the advanced stage). They are usually two to five mm in size and, as the disease progresses, may become confluent. The intervening mucosa is somewhat erythematous and edematous although it may appear normal. These pseudomembranes have histology as described below. Ulcerations are not typical of this disease except in the advanced stage where pseudomembrane sloughing has occurred.

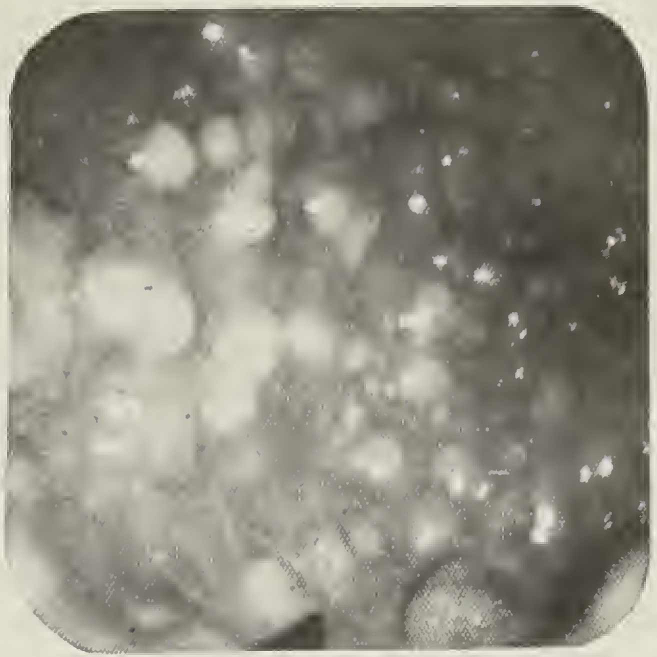
Figure 1

In the usual case, diagnosis can be established by sigmoidoscopy and X-ray studies are not necessary. In fact, if the patient is toxic and there is concern for development of toxic megacolon, barium enema is contraindicated. In those cases which have been studied, the X-ray picture, especially with air contrast, is characteristic.[5] With this technique the slightly elevated plaques can be demonstated. The typical distribution is throughout the colon with sparing of the terminal ileum (especially if antibiotic induced disease is the consideration). Ulcerations usually do not occur but the picture may simulate ulcerative colitis because the "sunken areas" of mucosa between the plaques may be interpreted as ulcers. The flat plate of the abdomen may demonstrate a nonspecific ileus pattern and, in severe cases, toxic megacolon.

PATHOLOGY

Biopsy of the involved colon reveals a pseudomembrane which is comprised of fibrin, necrotic debris, WBC's, RBC's and mucus.[4] This membrane sits atop the inflamed mucosa. The lamina propria may demonstrate an increase in inflammatory cells; the submucosa may demonstrate edema. Typically, this is not a transmural disease. In contrast to ulcerative colitis, crypt abscesses are not seen and there is an *increase* in goblet cells.

TREATMENT

In the patient who has been receiving antibiotics the initial treatment is discontinuation of the antibiotic. In most cases, the disease will be self limited and no further measures will be necessary.

In the event that the patient has significant protein and fluid-electrolyte loss, these deficits must be corrected. This situation arises in those patients with severe disease and complications. Parenteral hyperalimentation seems to have an ameliorating effect in some cases and may be given a trial in concert with the medical regimens described below.

None of the following specific measures have been subjected to controlled trials. Cholestryamine which is the most benign form of therapy has received some enthusiastic support in recent literature.[6] It may be warranted in the case which does not respond to discontinuation of the antibiotic. Secondly, there are adherents of steroid therapy in refractory, complicated cases. Finally, there has been renewed interest in vancomycin in view of the clostridia studies described above. It remains to be seen whether this will prove valuable.

Unfortunately, there are rare cases that seem to be refractory to all attempts at medical management. In this setting there are advocates of diverting ileostomy with reanastomosis at a later date or subtotal/total colectomy.

PROGNOSIS

The prognosis, although previously thought to be poor, is now felt to be good in those patients in whom the antibiotic etiology is quickly recognized and appropriately managed. The prognosis appears somewhat worse in those patients whose disease is encountered secondary to abdominal surgical procedures or in those in whom diagnosis is delayed.

CONCLUSION

The important summary points are: 1.) Pseudomembranous colitis must be considered in any patient who develops diarrhea, especially if the patient has been receiving antibiotics, is post operative, or has chronic underlying disease 2.) Sigmoidoscopy should be performed immediately to confirm the diagnosis; findings are typical and easily recognized 3.) Should this entity be encountered in the settings of antibiotics, those medications should be stopped immediately.

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Obstetrics and Gynecology

Colposcopy Update

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Since the previous article on "The Scope" in *Arizona Medicine* in 1975, a great deal of interest in the use of the instrument has occurred. Today, 90% of gynecologists are totally familiar with the purpose and use of colposcopy, approximately 30% being actively engaged in performing this procedure. This is only an example of the colposcopic explosion, not only in Arizona but across the nation. The literature is replete with papers on colposcopy during the past five years. Significantly, as colposcopy has become clinically established, it is one of the few newer techniques used more often in the gynecologists' offices, not being relegated only to the province of the teaching hospital. All teaching hospitals with Ob-Gyn residency programs have established colposcopy as an integral part of their residency programs, either as dysplasia clinics or colposcopy departments. For example, in Phoenix St. Joseph's Hospital, Good Samaritan Hospital and Maricopa County Hospital all have dysplasia clinics in which a large number of women with abnormal Pap smears are evaluated by colposcopic examinations. In addition, the Maricopa County Health Department (one of the few in the USA) is using colposcopy to examine at least 50-60 patients with abnormal Pap smears weekly. These patients, once advised about the findings, are referred either to their private physician or to the appropriate hospital clinic for further evaluation and/or surgery, depending upon the diagnosis. All basic and advanced colposcopy courses have experienced "standing room only" attendance. The eagerness and intensity with which the participants devote themselves to learning the technique is notable. At least one course a month is available somewhere in the country, many of which are sponsored by the American Society of Colposcopy and Cervical Pathology. ASCCP membership has increased dramatically during the last four years. Pre and post-testing are included at all the basic and advanced colposcopy courses. Understandably, clinicians become easily involved when one can witness a

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procedure and immediately be able to perform that procedure on his own patients. However, learning colposcopy requires study of the basic text books (which have only come into existence since 1972), attending a basic course, looking at a great number of slides, and only then beginning to examine patients. Many, many examinations are required to develop the confidence necessary to develop the accuracy to correctly match the colposcopic diagnosis against the post-colposcopy pathology reports. The Pap smear remains the primary screening test. The Pap smear, complemented by colposcopic examination, increases the diagnostic accuracy for cervical intraepithelial neoplasia from 87% to approximately 99%. The colposcope allows the physican to obtain visually directed biopsies and endocervical scrapings.

Pathologists have also shown great interest in becoming familiar with the nomenclature of colposcopy, having been besieged with countless numbers of visually directed biopsies and endocervical curettage specimens. Competent pathologists are making every effort to learn to work with the colposcopist. The elimination or regression of cervical cancer by early diagnosis and treatment is certainly of mutual concern.

Although colposcopy has been utilized primarily by gynecologists, many Family Practitioners have become interested and knowledgeable in the technique, as evidenced by their attendance at postgraduate courses and utilization of the colposcope in their practice. If the family physician has a special interest in this area, and is willing to devote the time to properly learn and practice the techniques, he can become as well-qualified as anyone. An increasing number of family physicians are attending colposcopy courses, and their presence is to be encouraged. It is equally important to educate physicians in other specialties about the value of colposcopy in the management of cervical dysplasia, and its effect in reducing the need for conization of the cervix through the use of directed biopsies. In addition, Pediatricians, Internists, and Family Physicians should be particularly aware of the importance of finding those young women whose mothers were given Diethylstilbestrol during their pregnancies and referring them for gynecologic and colposcopic evaluation.

With the wide spread use of colposcopy a number of problem areas have emerged which evoke many questions.

(1) Abnormal cytology and colposcopic changes in the pregnant patient. The principle of diagnosis is to "rule out invasive carcinoma". An experienced colposcopist will not routinely biopsy or cone the cervix unless a colposcopic exam indicates lesions that could be more advanced than carcinoma-in-situ. Intra-epithelial neoplasia often regresses after pregnancy, and extensive cervical biopsy during pregnancy can result in excessive bleeding or loss of the pregnancy. If the patient is too apprehensive to wait until completion of pregnancy, the colposcopist should accede to her wishes, especially in this day of medico-legal problems.

(2) When to do an endocervical curettage. If a visually directed biopsy of a lesion of the ectocervix is performed, an endocervical curettage is also usually done. If no lesion is present on the ectocervix, in the presence of an abnormal Pap smear, an endocervical curettage is obligatory. We have been impressed by the number of patients in our clinic with abnormal Pap smears who have dysplasia in the endocervical canal.

(3) Abnormal cytology after hysterectomy, regardless of whether it was performed for benign or malignant disease. As with any other patients with abnormal smears, treat for any infection or inflammation within the vagina or vulva, use estrogen cream in the vagina for two weeks, and then colposcope. By this time the lesions very often will have become quite distinguishable for biopsy and diagnosis.

(4) Use of cryosurgery or cautery for treatment of cervical dysplasia. Most experts agree that either method can be utilized for adequate and successful treatment of dysplasia. Cryosurgery is perhaps easier and less uncomfortable for the patient, but equal success can be obtained with either modality. However, it is important to decry the empirical treatment of the so-called "red cervix", "chronic cervicitis" or "cervical erosion" by either cryosurgery or cautery, without colposcopy. In many such cases, only normal columnar epithelium is being destroyed, resulting in destruction of the transformation and migration of the squamo-columnar junction high in the endocervical canal beyond colposcopic visualization and evaluation. Colposcopic examination should usually precede the use of cryosurgery or cautery on the cervix.

One of the new and exciting instruments to appear recently is the Laser, which has the capability of treating not only cervical dysplasia but also lesions of the vagina and vulva with extreme adeptness. Some colposcopists are now using the Laser; their opinions vary. Because it is new and represents a substantial financial outlay, the Laser is being used primarily in teaching and research institutions. However, it certainly seems to have distinct advantages over some of our present therapeutic modalities.

No attempt has been made to discuss in detail basic or advanced colposcopy procedures, but merely to reemphasize the importance of the understanding and use of colposcopy, and to urge those who are interested to contact the American Society of Colposcopy and Cervical Pathology. The current president is Doctor Duane Townsend of the University of Southern California. Many courses are available, both through ASCCP and teaching centers. It is hoped that all physicians doing pelvic examinations will become aware of the importance of colposcopy and the new dimensions for diagnosis and treatment that it has made available.

Oncology

Cis-Dichlorodiammineplatinum (II):

A New Antitumor Agent

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INTRODUCTION

Cis-dichlorodiammineplatinum (II) (DDP) is one of a new group of important antitumor agents that possess activity against a broad spectrum of tumor types. Although still an investigational agent undergoing closely regulated clinical trials, it should soon be available for general use by all licensed physicians. The purpose of this paper is to review the current status of this agent.

HISTORY

In 1965, Rosenberg et al. noted that replication of *Escherichia coli* was inhibited by passing a current between two platinum electrodes suspended in nutrient broth containing the organism.[1] Subsequent investigations revealed that this effect was due to the release of platinum from the electrodes in the presence of ammonium and chloride ions. In 1969, these investigators also reported that *cis*-dichlorodiammineplatinum (II) (DDP) had marked antitumor activity.[2] This led to the development of other platinum-containing compounds and multiple trials in animal tumor systems. Antitumor activity was noted in L1210 leukemia, Walker 256 carcinosarcoma, Ehrlich ascites tumor, and other systems. Clinical trials in humans have shown DDP to be an important drug in the treatment of testicular carcinoma, ovarian carcinoma, head and neck carcinoma, and bladder carcinoma.[3]

STRUCTURE

DDP is an inorganic metal complex formed by one platinum atom surrounded by two chlorine atoms and two ammonia groups in the *cis* position in the horizontal plane (Figure 1). The chemical structure of the complex is similar to the mustard-type bifunctional alkylating agents. Activity of this complex requires the *cis* configuration, as *trans* isomers have no antitumor activity.

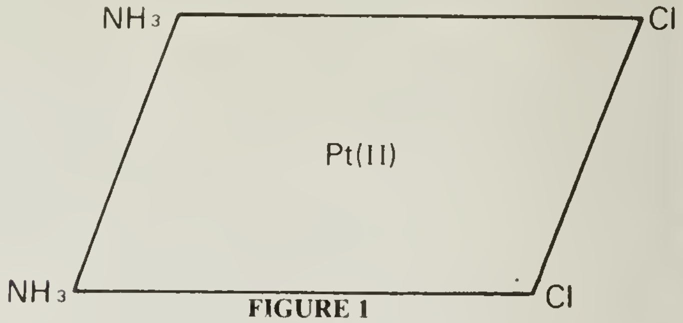

FIGURE 1
Structure of *cis*-dichlorodiammineplatinum (II).

MECHANISM OF ACTION

Although the exact mechanism of action of DDP at the molecular level is unclear, Rosenberg has suggested an appealing hypothesis.[4] *In vitro*, DDP is a neutral complex without an electrical charge. *In vivo*, the complex remains intact and non-reactive while circulating through the body. The high chloride content of the blood, lymph, and interstitial fluids prevents the hydrolysis of the chlorides in the complex. Once the complex has passively diffused into the cells, the chloride concentration is lower by a factor of 30 than the exterior chloride concentration. Hydrolysis of the chloride-containing groups can occur, giving rise to an actively charged complex. This provides two active sites for attachment to DNA bases. Interstrand and intrastrand cross-linking of the DNA bases then occurs.

The primary action at the cellular level of treatment with therapeutically achievable doses is a severe and prolonged inhibition of new DNA synthesis, with minimal effect upon RNA and protein synthesis. Platinum treatment has little effect upon the synthesis or transport of DNA precursors. Drewinko and Gottlieb have shown that DDP kills human lymphoma cells in tissue culture at all stages of the cell cycle and thus appears to be a cell-cycle-non-specific agent.[5]

ACTIVITY

DDP has been found to be extremely effective in the treatment of non-seminomatous testicular tumors. With DDP used as a single agent, response rates have ranged from 42%-90%. Activity is seen in all subgroups of testicular tumors. More impressive is the use of DDP in combination with vinblastine and bleomycin in the treatment of advanced testicular tumors. Einhorn reported a 100% combined complete and partial response rate[6] with 74% of these patients obtaining a complete response and over 50% of these complete responders living longer than 2 years without evidence of recurrent disease. The Southwest Oncology Group has used the same drug combination in slightly different schedules and has a combined complete and partial response rate of 83% with a complete response rate of 16% (unpublished data). This regimen is given less frequently than the Einhorn regimen and this may account for the difference in response rates. The morbidity of the Southwest Group study was also less than that reported by Einhorn. These clinical trials indicate that this three-drug regimen is the best available

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herapy for disseminated testicular carcinoma. Since a significant proportion of these patients are surviving 2 years without recurrent disease and are probably cured, it is imperative that patients receive this combination as their initial chemotherapy.

Ovarian carcinoma has been shown to be responsive to DDP. With DDP as a single agent in previously treated patients, a 24% response rate was observed, with the length of response varying from 3 to 15 months.[3] Promising clinical trials utilizing DDP in combination therapy are presently ongoing at the University of Arizona and at other participating member institutions of the Southwest Oncology Group.

Head and neck tumors treated with DDP have an observed response rate of 26% as reported from the Memorial Sloan-Kettering Cancer Center.[3] Only five other drugs — mitomycin-C, cyclophosphamide, methotrexate, 5-fluorouracil, and adriamycin — have shown response rates greater than 20% in this group of tumors.

Experimental data from University of Arizona studies show marked antitumor synergism between DDP and hyperthermia. This new approach may offer increased effectiveness of the drug in the treatment of head and neck malignancies and is currently being explored further in our institution.

DDP is presently undergoing clinical trials in many other tumor types. Preliminary evidence shows some activity in the treatment of bladder carcinoma, myeloma, lymphoma, lung carcinoma, and thyroid carcinoma.

TOXICITY

The major side effects of DDP are nephrotoxicity, hematologic depression, high-frequency hearing loss, nausea and vomiting. Renal toxicity is the dose-limiting side effect. Elimination of DDP is dependent upon urinary excretion of the drug. DDP administration has been associated with pale kidneys which exhibit a swollen cortex and congested medulla. Microscopically, there may be necrosis of the epithelium of the distal convoluted tubule and collecting tubules. Hyaline and granular casts are found in the collecting ducts. The proximal convoluted tubules and glomeruli are unaffected.[7] These changes (which are dose-dependent) can lead to irreversible renal failure. Forced diuresis by means of large fluid volume intake with or without mannitol decreases the urinary concentration of DDP and helps prevent renal toxicity.

Suppression of the bone marrow does occur with DDP, but it does not seem to be as pronounced as with other chemotherapeutic agents. Thrombocytopenia may be dose limiting when DDP is combined with other myelosuppressive agents.

Serial audiometric studies show a high-frequency hearing loss in some patients that is slowly reversible in the younger patients.

Nausea and vomiting are universal with DDP. This does not appear to be dose related. With a 5-day course of DDP, nausea and vomiting are more pronounced on the first day of therapy when compared to the fifth day. Large fluid loads with a good diuresis may slightly decrease the nausea and vomiting.

DRUG SUPPLY AND ADMINISTRATION

At the present time, DDP is classified as an investigational agent and is not available for general use by all physicians. FDA approval of DDP is pending and it is hoped that DDP will be commercially available in 6-9 months.

DDP has been used most commonly in two dose schedules: (A) 50-75 mg/M^2 of body surface area once every 3 weeks, and (B) 15-20 mg/M^2 of body surface area daily for 5 consecutive days repeated every 3-4 weeks. An intravenous solution of the drug is administered over approximately 1 hour. It is mandatory that the patient be well hydrated and have a normal serum creatinine prior to DDP administration.

At the University of Arizona, DDP is dissolved with sterile water, added to 40 grams of mannitol and brought up to a total volume of 1000 cc with 5% dextrose — ½ normal saline.[8] This solution is administered at the rate of 1 mg of DDP per minute. This amount of mannitol has a sufficient osmotic diuretic effect to prevent renal toxicity and has allowed us to give DDP in less than a 2-hour period in the outpatient setting. We have seen no immediate or cumulative renal toxicity using this regimen.

SUMMARY

Cis-dichlorodiammineplatinum (II) (DDP) is a useful antineoplastic agent for the treatment of testicular carcinoma, ovarian carcinoma, and head and neck carcinoma. The combination of DDP, vinblastine, and bleomycin is probably the treatment of choice for patients with advanced testicular tumors without prior chemotherapy. The major toxicities are nephrotoxicity, bone marrow suppression, high-frequency hearing loss, nausea and vomiting. Prior to administration, the patient should be well hydrated and have a normal serum creatinine. To prevent renal toxicity, a forced diuresis utilizing mannitol and/or large fluid volumes should be used.

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Pediatrics

Genetics 1978:

Progress and Problems

Tracy L. Trotter, M.D.

Twenty-five years ago the medical application of genetics consisted almost entirely of genetic counseling. It served a relatively small group of families in which a disease of known Mendelian inheritance was segregating, and usually consisted of taking a family history, estimating the risk of recurrence of the disease in particular family members, and conducting a more or less desultory discussion of the implications thereof. The extraordinary growth of knowledge and techniques since then has changed the picture dramatically. I would like to explore this growth in terms of new techniques in human genetics, new choices available to prospective parents, and the resulting legal questions that arise.

The new tools available to human geneticists can be classified as diagnostic and therapeutic. Many of them have been developed in the last 5 to 10 years.

DIAGNOSIS:

Chromosomal analysis has become so routine that it has been incorporated into the armanentarium of most practicing physicians. It can be used to detect abnormalities in the fetus, the newborn, the child and the adult. Chromosome aberrations cannot, of course, be "cured", but certain conditions, such as XO, can be treated with hormones to correct deficiencies and to promote more normal growth and development.

Many inborn errors of metabolism can be diagnosed directly by enzyme assays or indirectly by measuring abnormal urinary amino acids. Detection of heterozygosity for single-gene defects and balanced chromosomal rearrangements have also broadened our capacity to identify individuals and couples who are at high risk for bearing abnormal children.

Perhaps the most exciting, and to some the most frightening area of technicological advance is the direct invasion of the uterus for the diagnosis of fetal abnormalities. This imposes on prospective parents the serious decision of whether to bear a defective child or undergo a selective termination of the pregnancy.

Amniotic fluid can be examined directly for biochemical abnormalities while the cells can be separated by centrifugation and cultured in vitro. More than 60 biochemical defects and all known chromosomal defects can be diagnosed by amniocentesis.

The discovery that alpha-fetoprotein (AFP) levels are elevated in amniotic fluid when open neural-tube defects are present (such as spina bifida and myelomeningocele) has lead to the pre-natal diagnosis of another category of birth defects. More recent studies on maternal serum levels of AFP suggest that this procedure may be a simple, inexpensive, and useful screening procedure of all pregnancies to identify high risk fetuses.

Many fetal abnormalities cannot be diagnosed by amniocentesis. In the last few years the fetoscope has been added to the obstetricians' armamentarium. This instrument, inserted into the uterine cavity, permits visualization of the placenta and fetal parts. Limb abnormalities, spina bifida, omphalocele, and other external congenital defects can be detected by fetoscopy. Also a biopsy of fetal skin can be obtained through the fetoscope for fibroblast culture and a fetal blood sample can be withdrawn for other studies.

Amniography (injection of a radio-opaque dye into the amniotic cavity) can offer additional information. If an oil soluble dye is used it adheres to the fetal skin allowing visualization of the external surface of the head, trunk and extremities. Aqueous dyes are swallowed by the fetus permitting visualization of the gastrointestinal urinary tracts.

Ultra-sound techniques have been used successfully to obtain fetal images. Contrasting grey levels can be

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obtained by computerized conversion of scanning intensity. Fine details of internal structures such as heart, kidney and bladder have now been seen.

THERAPEUTIC:

In addition to the diagnosis of genetic conditions, inroads have been made in treatment of genetic disease and defect. Perhaps the most striking example is the low phenylalanine diet for phenylketonuria (PKU). If the diet is initiated shortly after birth it prevents mental retardation. Diet plays a role in many metabolic inherited disorders such as a milk-free diet in galactosemia, Vitamin B_6 therapy for cystathioninuria, and others.

Protein, hormone and enzyme replacement therapies such as pancreatic enzyme therapy in cystic fibrosis and corticosteroids in adrenogenital syndrome have had varying degrees of success. Surgical intervention and organ transplantation are other modalities in the treatment of genetic diseases.

COUNSELING:

These advances in applied medical genetics have led to an expansion of genetic counseling services. Instead of merely quoting risk factors, medical geneticists now have an abundance of information as well as a number of alternatives to offer most parents.

In most cases patient are referred for genetic counseling after the birth of an affected child. In the past it merely was a matter of identifying the genetic disease and quoting the risk factors to the parents. The only choice available was whether or not to have further children and this was considered to be an ethical question left entirely to the prospective parents.

Now, however, the counsellor's duty to the counsellee is more complicated. As screening procedures proliferate, high risk couples may be identified before any children are born. Often times the discovery of a "carrier" state may be made when there are no affected relatives. The couples may receive information they in fact did not seek. They also find it difficult to comprehend the burden of a disease or defect with which they have never dealt.

On the positive side however, a high risk couple may choose to avoid having defective children by prenatal diagnosis and selective termination of pregnancy and yet not forego children altogether. This introduces other difficult ethical choices. Does termination of pregnancy lie outside their value system? If a sex-linked recessive trait is involved, such as Duchenne's muscular dystrophy, would they decide to abort all male fetuses even though 50% of them would be expected to be normal?

In 1914, Justice Benjamin Cardozo wrote: "Every human being of adult years and sound mind has the right to determine what should be done with his own body".[2] Thus a legal duty is placed on the counsellor to explain the risks and burdens of genetic disease to the counsellee and to discuss reproductive alternatives. The counsellor must convey the message in practical and understandable terms so that the counselee may make an informed decision. Until recently, most courts have required a "professional standard" of disclosure: i.e., what another reasonable doctor or counsellor would tell the patient under the same or similar circumstances. Now, however, some jurisdictions have adopted a "patient standard" of disclosure: i.e., what a reasonable patient would need to know in order to make an informed decision.[3]

Parental choices are becoming more difficult as our knowledge and technology increase. For example, retinoblastoma is an autosomal dominant disease which can lead to blindness in early childhood. Often partial sight can be maintained by using radiation therapy instead of surgical enucleation of the eye. Recent studies have disclosed however, that persons with retinoblastoma who survive childhood have an increased risk of other cancers, especially during the second and third decades of life. Since many infants with retinoblastoma are now being saved by aggressive therapy, those who choose to reproduce are exposing their offspring to risks of osteosarcoma and other malignancies. The burden of the retinoblastoma gene is greater than heretofore believed.

Another example of the increasing complexity of both parental and physician decision is that of the PKU situation. When simple, inexpensive screening tests were devised in the early 1960's, many states passed laws requiring neonatal testing. The low phenylalanine diet is very effective in preventing mental retardation. Children caught in the screening net are now growing up to lead relatively normal lives. It has recently come to light that we have now created another, entirely new, genetic problem. If homozygous PKU women become pregnant, the high phenylalanine levels in the blood cross the placenta, and can cause defective brain development in the fetuses. More than 90% of these children are severely or mildly retarded. This is a genuine example of a birth defect due to maternal environment since the fetuses are genetically heterozygous for PKU. From a risk/benefit point of view, we may have gained several mental defectives in the second generation for each retardate prevented in the 1st generation. Should we now require sterilization of female PKU infants? Should the PKU women be aggressively counselled to refrain from reproduction? Will a low phenylalanine diet during pregnancy prevent the problem? The answers to these questions are not easy ones.

The new tools of the new genetics have thrust upon prospective parents new choices. These factors lead to new problems which are now appearing as legal contests in the courts. Parents have rising expectations for healthy offspring and are claiming that physicians are negligent in failing to provide them with procreative options based on the new diagnostic techniques.

There have been at least 2 law suits brought against obstetricians for failure to perform amniocentesis.[4] In a California case a jury apparently accepted the physician's claim that it was not standard medical practice to perform amniocentesis in 1970, when the birth took place, even though the mother was 42 years old when her child was born with Down's syndrome.

Two other cases involving genetic disease have also been reported.[4] In 1972, a baby was born with Tay-Sachs Disease and died in 1974. This condition, an autosomal recessive disorder, results from the absence of the enzyme hexosaminidase A. Both parents were Ashkenazi Jews, an ethnic group where the carrier frequency is about 1 in 30. The parents alleged that the doctor should have known that they might be carriers and that there was a simple test available to determine if they were at high risk. They also alleged that if the obstetrician had offered to test them, and finding them to be carriers, tested their fetus by amniocentesis, that they would have elected to terminate the pregnancy. Their claims for medical, nursing, hospital and funeral expenses were recognized by the court.

In the other case a first and second child were born with congenital polycystic kidneys, an autosomal recessive condition that is invariably fatal in early childhood. After the first child was born but before the second child was conceived, the doctor falsely reassured the parents that there was little or no danger of recurrence. The actual probability was 1 in 4 that a subsequent child would be affected. The judge held that both the parents and the second child had a cause of action against the physician. The child was given the right to sue for pain and suffering after her birth.

Recent advances in genetics have been accompanied by a variety of difficult ethical and legal problems. Our knowledge is deeper, our techniques more reliable, the opportunities for both good and bad greater, and the questions to be answered and decisions to be made sometimes more difficult than ever.

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Psychiatric Disorders

The Distressed Physician:

Where Do We Go From Here?

Thomas E. Bittker, M.D.

In an effort to cope with the problem of the distressed physician, the Physicians Rehabilitation Committee was created in December of 1973 by the Arizona Medical Association. The Committee was initially conceived to assist physicians suffering from problems of substance abuse, alcoholism, dementia, depression and other emotional disorders. Conservative estimates suggest that incapacitating emotional problems affect more than six percent of the 3,600 physicians currently licensed to practice in the State of Arizona.[1] The Committee was not intended to be a source of discipline for the wayward doctor. That function remained with the Arizona State Board of Medical Examiners. Rather than discipline, the principal function of the Committee was to serve as a compassionate resource for those concerned about the troubled physician. This constituency included the public at large, colleagues, family members and the troubled physician himself.

FOUR YEARS EXPERIENCE WITH THE PHYSICIANS REHABILITATION COMMITTEE

From January 1974 through April of 1978, 25 physicians have been referred to the Committee. Currently, 11 are being actively followed. Not unlike the pattern experienced by other similarly conceived state committees, a

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large proportion of the referrals to the Committee were precipitated by symptoms attributed to alcohol use, affective disorder and drug abuse.[2,3] A review of 20 available physician charts indicated that five physicians were referred for problems directly related to alcoholism; four for drug abuse; five for a major mood disorder; three for dementia; two for sexual improprieties with patients; one for a family-related problem and four for patterns of unconventional practice. Four charts reflected combined problems.

In contrast to this referral rate, approximately six physician referrals per year, the Board of Medical Examiners in 1977 alone received 250 physician-related complaints that spanned ethical problems, legal difficulties as well as frank impairment. Currently, approximately 42 physicians are on probation with the Board of Medical Examiners for behavior indicating a significant impairment in their capacity to practice medicine. Two physicians had their licenses canceled in 1977. The referral pattern to the Disciplinary Board in contrast to the Physicians Rehabilitation Committee indicates that significant denial still exists regarding the magnitude of the problem of the distressed physician. Ideally, referrals to the Physicians Rehabilitation Committee should occur prior to a time when impairment becomes obvious. In practice, in order for physicians to receive help, most are compelled to signal their impairment by behavior that ultimately endangers the welfare of their patients. What follows is part of an effort to alert physicians to the level of distress among us so that earlier detection of problems may occur to the benefit of physicians, their families, and their patients.

THE MAGNITUDE OF THE PROBLEM

Extrapolating from the six to eight percent figure widely quoted as an estimate of the number of physicians suffering from alcoholism, drug abuse or major emotional problems, at least 200 physicians currently practicing in the State of Arizona are so significantly impaired to warrant psychiatric care.[4,5] Nationally, at least 100, and perhaps 300 physicians kill themselves each year. Ross has emphasized that in the United States suicide accounts for more physician deaths than automobile accidents, plane crashes, drownings and homicides combined.[6] Most tragically, among medical students, suicide is the second most common cause of death. Among physician marriages, 47 percent are deemed unsatisfactory.[7]

Several epidemiological studies have estimated the prevalence of psychiatric disorder in the North American population to range from 20 to 25 percent.[8,9,10] Depending on the availability of care, financial resources and third-party reimbursement, the annual incidents of request for outpatient psychiatric treatment ranges from one to 36 per 1,000.[11] Psychiatrists, however, are not the principal helping resource for the individual or family in distress. Typically, middle class and working class Americans will seek out physicians and clergymen prior to becoming involved in the professional mental health sector.[12,13] Although the level of psychiatric distress among physicians should be no less than that obtaining in the general population, there remains serious doubt as to whether the distressed physician is as likely to seek out helping resources as are his non-physician counterpart in the general population.

The physician emerges from his training with a variety of character traits that normally would contribute to success. Unfortunately these traits, when exaggerated, contribute to resistance to seeking help. These traits include qualities of self-sacrifice, perserverance, competiveness and denial of feelings. As I have discussed previously, physicians are burdened by the expectations to present almost superhuman qualities to their patients and their colleagues. As many of us fall short of this ideal, we tend to retreat from others, but rarely reach out for help.[14]

Achievement needs may subvert other qualities essential for a balanced personality. The high risk physician lacks the capacity to play, often lacks awareness of dysphoric feelings such as rage and sadness, is ill-equipped to express these feelings to others, and equates the seeking of nurtuance with personal weakness. That there is a relationship between these achievement needs and the physician's potential decompensation is supported by the studies of Bissell and Jones indicating that more than half of 98 alcoholic physicians interviewed graduated in the upper one-third of their medical school class. More than 23 percent were in the upper one-tenth and only five percent of the group reported being in the lower one-third of their class.[15]

Obligatory over-achievement is one manifestation of the obsessive character more likely to occur among those raised by autocratic and restrictive parents. Over-achievement emerges when the child feels that he can maintain self-esteem only by satisfying the demands of others. Inherent in the socialization of physicians are factors that reinforce over-achievement. The self denial required by the rigors of training reinforces a behavioral pattern that most physicians must actively unlearn in order to achieve a satisfying personal life.

While the at-risk physician has particular difficulty recognizing and satisfying his demands for nurturance, some solace can be achieved by satisfying the demands of patients. The physician in this instance projects out onto patients his own dependent needs and then addresses them in a way which he could not tolerate if these same needs were recognized in himself.

THE CAREER OF THE SICK PHYSICIAN

Unaccustomed to appreciating personal needs, the physician may saturate his life with professional obligations leaving little opportunity for the cultivation of recreational skills, relationships with friends and with family. Ultimately, frank depression may emerge. The depression may be heralded by the loss of a significant friend or family member, physical illness, awareness of aging, or simply by the perceived failure to satisfy some highly valued expectation. In response to this depression, he may work even longer hours or he may attempt to blunt his sensitivity by the inappropriate use of drugs or alcohol.

In other instances he may attempt to bolster his failing

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self-esteen by a frenzied pursuit of distracting stimuli. He may engage in unwise financial schemes or over-invest himself in material goods. To cope with the guilt of having not lived up to his marriage contract, he may recklessly splurge on a special occasion or lavish extravagant gifts on the marital partner. Depression or divorce may emerge soon after the construction of a dream house. All too often financially well-endowed couples will defer pleasures until they have achieved their material ideals. They discover too late that an elaborate configuration of stone and glass is no replacement for the emotional warmth lacking in their marriage. Frequently, the physician will request help. In Bissell and Jones study, more than three out of four sought professional help for their alcoholism and more than 70 percent stayed in treatment for two or more years. Unfortunately, these physician patients frequently complained that potential helping resources refused to deal with their alcoholism or chose to regard it as a symptom of some other underlying condition.

Less inciteful physicians will request help more indirectly offering out of context remarks regarding "sick friends." Often the request will occur at the most inopportune time and place such as during hospital rounds or while mingling with colleagues at a cocktail party. In more recalcitrant cases, hospital administrators, medical record librarians, nurses, family members and fellow physicians will voice their concerns about the problem long before the physician is prepared to recognize his distress.

Certainly the denial of the problem does not rest with the physician-patient alone. Identification with the sick physician can serve to undermine a willingness to confront the problem on the part of colleagues. Furthermore, the concerned observer may resist confronting the physician for fear of undermining what may be already a very tentative rapport. Unfortunately, it seems that the resistant physician must too often betray his obligations to his patients before outside authorities are alerted and he is forced to seek help.

SOME KEY REALITIES IN THE FUNCTIONING OF A PHYSICIANS REHABILITATION COMMITTEE

Some under-reporting may be mitigated by a clearer perception of the role of the Physicians Rehabilitation Committee and of those who report to the Committee.

First, reporting physicians, according to the laws of the State of Arizona, are not liable for alerting the Physicians Rehabilitation Committee regarding possible physicians in distress. Of course, in spite of this lack of liability, an angry recipient of solicitation, may nonetheless sue. Within the State of Arizona, the Mutual Insurance Company of Arizona (MICA) will defend any insured physician threatened by a liability suit because of this reporting action.

Second, we cannot escape our obligation to prevent exploitation of patients by impaired physicians. We are all charged with a public trust. If we wish to retain the powers conferred by our society on physicians, we must perserve the integrity of the profession by risking time, possible rebuke and discomfort by reporting impairment when we witness it. To maintain denial or to procrastinate ultimately leaves us all vulnerable, whether impaired or not, to further scrutiny and control.

Third, not all distress is impairment. The Physicians Rehabilitation Committee distinguishes between the impaired physician and the distressed physician. An impaired physician is a physician who is considered by his colleagues as unable to practice medicine with reasonable skill and integrity by reason of illness, abuse of alcohol, excessive use of drugs, or as a result of any mental or physical condition, professional incompetence or senility. On the other hand, the distressed physician is one whose level of practice continues to conform to the standards endorsed within the medical professional community, but who shows signs of stress as a result of an emotional disorder, substance abuse or as a result of medical illness. These signs of stress will vary between individuals and manifest themselves as changes in behavior as witnessed by loved ones, colleagues and patients. The former physician warrants prompt reporting to the Board of Medical Examiners. Limit-setting will need to be coupled with a compassionate approach toward rehabilitation. The latter physician warrants the attention of medical and psychiatric professionals, involvement in a rehabilitation program, but may not necessarily require disciplinary action.

Fourth, although initially protesting the need for help, many physicians, from my experience, are grateful when their problem has been recognized. Typically, recognition of the problem results in a sequence of events fostering hope that the problem may be resolved by a constructive approach. The high rate of successful rehabilitation among physicians involved in the Caduceus Program in the State of Georgia testifies to the value of early recognition and treatment.[16]

TOWARD PREVENTION

To deal with the problem effectively, we need to move beyond simply recognizing impairment in the troubled physician. Solutions must begin much earlier. First, at the medical school level, students and faculty should challenge the assumptions that: physicians must overwork in order to escape guilt and censure; must be either wealthy or well-published in order to be successful; or must be perfect.

Second, peer-oriented self-help groups should be instituted at all levels of training and experience. Thus, annual meetings should provide an opportunity for physicians to join together in small groups in order to re-examine their professional identity, their lifestyle and their future.

Third, as a profession we are so drug-oriented in dealing with patients that we are all too often drug-oriented in dealing with our own distress. Physicians must be trained in alternative means of dealing with stress. These include training or retraining in constructive uses of leisure time such as wilderness, art or music appreciation; fitness programs; cultivating skills in such communication techniques as assertiveness training and peer counseling; and instruction in meditative equivalents.

Fourth, a welcome ally in helping ourselves are our spouses. Physician spouse affinity groups offer an excellent opportunity to bring into the homes some very basic principles of mental health. Ultimately, such spouse groups can grow to embrace a total family orientation. As a compliment to this, medical societies warrant sponsoring couple retreats that can be coordinated with continuing education programs.

Ultimately, we can only deal satisfactorily with the disabled physician when we successfully deal with the ubiquitous pressures operating throughout our profession. In each one of us are planted seeds of positive functioning and help as well as the seeds of disaster. To eradicate the latter, we must cultivate the former.

ACKNOWLEDGMENTS

Mr. Bruce E. Robinson has for the past four years provided staffing support to the Arizona Physician Rehabilitation Committee. His support has been critical to the Committee's conception, survival and occasional successes.

Richard Duisberg, M.D., served as the Committee's first chairman, 1973-1977.

Audrey M. Somers assisted in the preparation of this manuscript.

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Case of the Month No. 32

Glenn C. Cook, M.D.
John C. Bjelland, M.D.

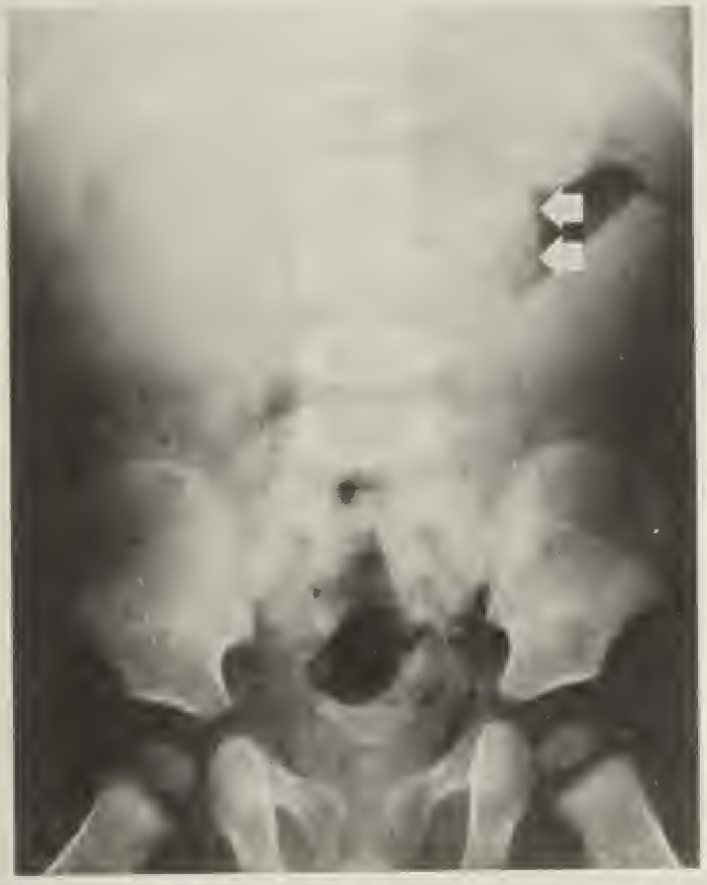

FIGURE I
Note the absence of bowel gas in the right half of the abdomen and the curvilinear density in the region of the midtransverse colon (arrows).

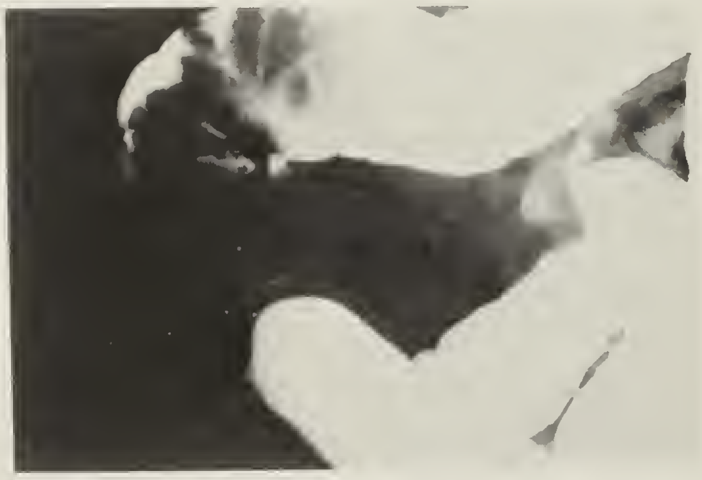

FIGURE II
Note the filling defect at the head of the barium column.

An eleven month old male was brought to the emergency room because of continued, intermittant vomiting and colicky abdominal pain. Between colicky episodes, the child would become very lethargic. The only bowel movement since the onset of symptoms was normal.

Because of the patient's clinical condition and the findings on a plain film of the abdomen (see *Figure I*), a barium enema was obtained (see *Figure II*). Prior to the introduction of barium, a mass was palpated in the upper abdomen. What is the diagnosis?

From: U of A Health Sciences Center, Department of Radiology, Tucson, AZ 85724.

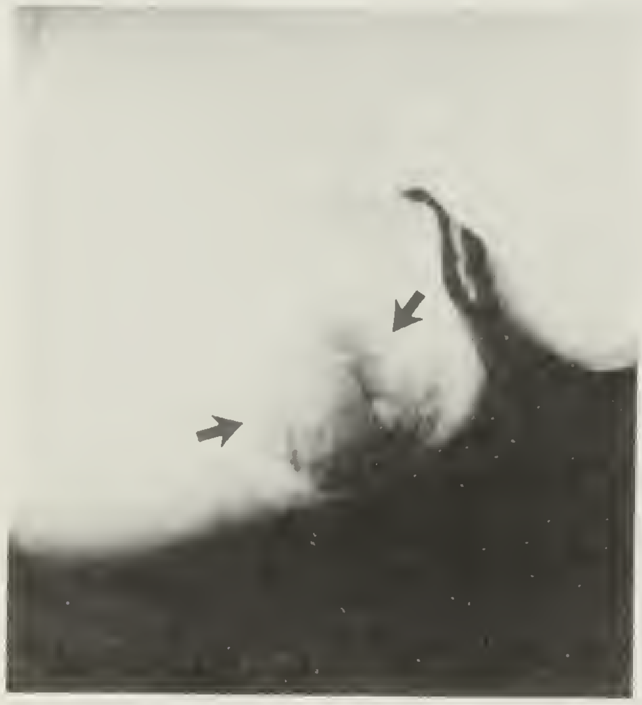

FIGURE III
The filling defect in the cecum represents the unreduced intussusceptum.

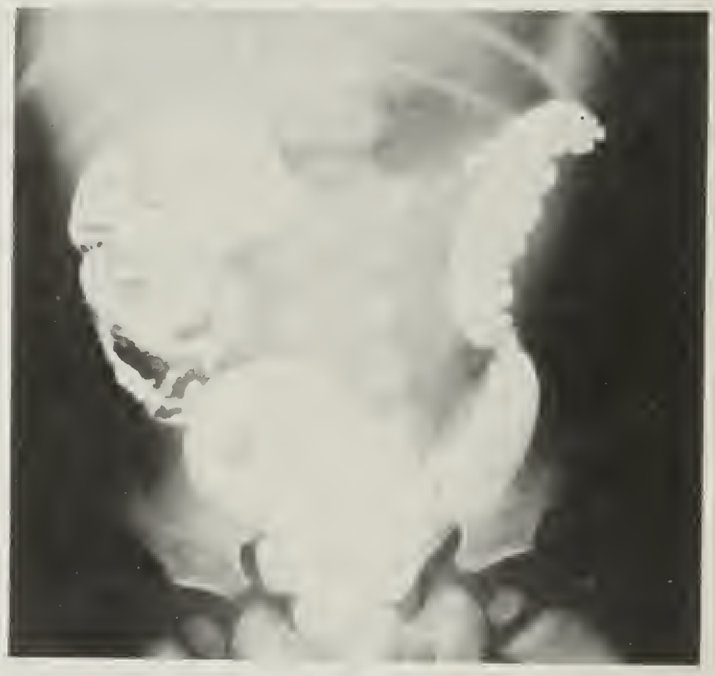

FIGURE IV
Note the classical "coiled-spring" appearance of the intussusception on the post-evacuation films.

Several attempts were made at reduction of the intussusception, but a filling defect persisted in the cecum (*Figure III*). Gluagon, 0.5 mg I.V. was then injected, and reduction was again unsuccessfully attempted. The post evacuation radiograph (*Figure IV*) demonstrates the "coiled-spring" appearance of the intussusception which is the result of barium seeping around folds in the intussuscipiens.

The intussusception was gently and completely reduced at surgery. The intussusceptum was noted to originate approximately 3 inches proximal to the ileo-cecal valve. No evidence of necrosis or perforation was found in the involved bowel, and no lesion (or "leading edge") was identified. The patient had an uneventful post-operative course.

Intussusception is the most common cause of acquired intestinal obstruction in infancy. Although rare in the neonatal period, it is quite common prior to the age of two years. The etiology frequently is unknown, but intussusception occurs most commonly in well-nourished male infants. Prominent Peyer's patches have been thought to play a role in spontaneous intussusception. In less than 4% of all cases, a predisposing lesion is found to be the precipitating cause.

Clinically, these patients are well prior to the sudden onset of paroxysmal, colicky abdominal pain. Vomiting may occur and, if prolonged, may be bile-stained. The initial bowel movement may be normal, but subsequent stools are frequently bloody. The combination of mucous and blood gives the characteristic "current jelly" appearance to the stool. A sausage-shaped abdominal mass is frequently present which may fluctuate in size and location.

Barium enema is both diagnostic and therapeutic. The radiographic findings are those of complete bowel obstruction with a mobile filling defect at the head of the barium column. The classic "coiled-spring" appearance may also be seen.

Hydostatic reduction is the treatment of choice unless there is evidence of frank obstruction or peritonitis. Reduction is undertaken using a non-lubricated, large bore Foley catheter. The barium should not be raised higher than 3 feet above the plane of the patient, and the reduction should be fluoroscopically monitored. Several attempts at reduction should be made allowing for 3 to 5 minute intervals between efforts. If initial attempts at reduction fail, .5 mg to 1.0 mg of Glucagon may be administered intramuscularly. Abdominal compression and manipulation may also be needed for complete reduction.

The radiographic features are diagnostic. While most intussusceptions are idiopathic in origin, the differential diagnosis is one of predisposing factors. Among these in decreasing order of occurrence are Meckel's diverticulum, polyps, duplications, Henoch-Schonlein prupura, post-surgical changes, and tumors (*e.g.*, lymphosarcoma).

In summary, although intussusception is rare in the neonate, it is still the most common cause of acquired infantile intestinal obstruction and occurs most frequently in healthy, well-nourished boys. The etiology is usually not demonstrable, but several predisposing pathological entities must be considered. The treatment of choice is hydrostatic reduction with barium enema, but surgical intervention may be necessary.

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Special Articles

Medicine in Mexico

X. Human Resources

Charles C. Daschbach
Robin J. Connolly

Within the topic of Mexican health care, nowhere is there more diversity than in the facet of medical providers. At one end of this spectrum is the Huichol Indian shaman, or *mara'-akame,* whose healing tradition incorporates the spiritual beliefs and daily philosophy of his tribe. His antithesis is the medical specialist in Mexico City, often trained in a European or American residency program and familiar with the latest scientific advancements. Both play an integral and evolving role in Mexican medicine today, making a description of health manpower a complex and confusing task.

Over 55,000 physicians are currently licensed to practice medicine in the Mexican republic. With the recent proliferation in medical universities, this number will be increasing 25% each year beginning in 1979. Current demographic information is lacking, but the data gathered in the last census provides a gross approximation of medical practice patterns. In 1970 almost half of all Mexican physicians worked in the Federal District with a ratio of 474 inhabitants per doctor while the rural tropical state of Chiapas had over 4,600 persons per physician. Of the 2,388 registered municipalities, 53% had a residing physician. Often used as an indicator of public access to physicians is the number of medically certified deaths, which accounted for 93% of all urban and 47% of all rural deaths in 1970. This picture may have changed considerably today, with increases of 33% in the total population (100% in Mexico City) and 64% in the number of physicians in the last seven years.

In 1976 approximately 43% of all physicians worked for one of the socialized health institutions (IMSS, ISSSTE, etc.) and 22% were directly employed by the government (SSA, state and local). While this leaves a figure of 34% in private practice, a considerable number of those in the socialized and public sectors also have a private practice. The best estimates give numbers of about 25,000 doctors, or 50% of the total, in full or part-time private practice, attending 18% of the mostly urban population.

The most acute shortage of hospital medical personnel exists in the field of nursing. With just over 20,000 general nurses, there is one nurse for every 2.5 Mexican doctors, and the graduation forecasts predict that this ratio will rise to one per three physicians by 1980. Cultural factors relating to the role of the Latin American woman contribute heavily to neglect of what is considered a "woman's job" in the Mexican medical institution.

It is in the rural areas that the women of Latin America plays a dominant role in health care delivery, principally as the village *partera* or midwife. She is often the herbal folk healer (*curandera*) or can specialize in healing through massage as the village *sobadora.* The status and capabilities of local health providers is as varied as regional customs and tribal traditions, ranging from the concomitant political role of the tribal *shaman* to the highly specific art of the village bone-setter.

The middle ground between the medical specialist and the traditional folk healer has been filled by thousands of small peri-urban and rural pharmacies. Not only will the pharmacist himself prescribe drugs for customers, but the availability of drugs without a prescription has created a large category of *"medicos practicantes"* or empirical doctors who freely prescribe palliatives. The special aura associated with the hypodermic needle has created still another group comprised principally of women who inject, called *inyectadores.*

In all, over 200,000 persons are thought to fill the broad non-licensed medical provider population. Along with the doctors, nurses, and health technicians, they demonstrate the extremes and convergence of "medicine as science" and "medicine as art" in the myriad complexity of Mexican health manpower.

From: Medical students at the Autonomous University of Guadalajara. Address reprint requests to Mr. Daschbach, 1101 S. Lehigh Drive, Tucson, AZ 85710.

Preliminary Report:

Localization of a Parathyroid Adenoma with Thermography

Robert V. Diserens, M.D.
Gabriel F. de Freitas, M.D.
Robert H. Tamis, M.D.

Primary hyperparathyroidism is being diagnosed with increasing frequency due to the routine use of biochemical profiles containing a calcium determination. Most of these are single, benign adenomas located within the neck. They are rarely palpable. Surgical localization has on occasion been a problem. Below is described a case with localization of the adenoma accurately demonstrated pre-operatively by thermography.

Case Study

A 79 year old woman was evaluated for intermittent abdominal pain. A pyloroplasty and vagotomy for a duodenal ulcer was performed in 1971. She had had a right nephrectomy for stones in 1947. Biochemical and radiolgraphic studies supported the diagnosis of hyperparathyroidism. A thermogram of the neck was obtained (Figure 1).

At surgery a 3 x 2 x 1½ cm. parathyroid adenoma was removed from the same area localized by thermography. Subsequent calcium determinations have been normal and her gastrointestinal complaints have abated.

Discussion

Thermography utilizes the radiation energy in the infrared portion of the spectrum. A detector converts the radiation in this spectrum emanating

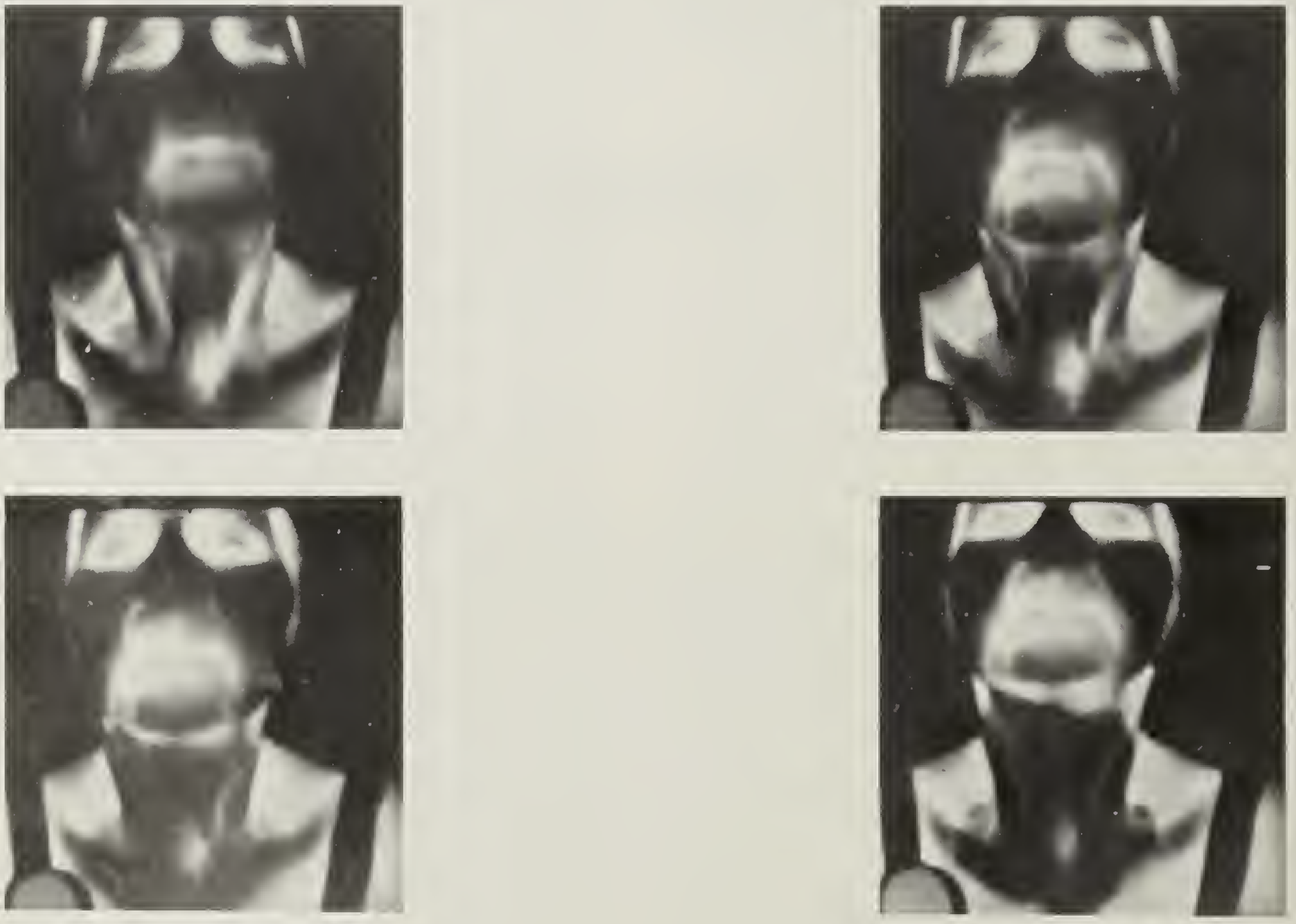

FIGURE 1
A "hot spot" is clearly demonstrated in the left lower neck anteriorly, corresponding to the parathyroid adenoma.

From: 909 E. Brill, Phoenix, AZ 85006.

from the body surface into an electrical signal which is recorded as a thermal image. Its application in medicine began in the 1950's and initially was applied to breast carcinoma.[1] Reviews over the next decade pointed to its use in other malignant diseases, peripheral vascular disease and thyroid disease.[2,3]

Successful localization of abnormal parathyroid tissue by thermography was shown to be feasible in 1972 by Samules, et al.[4] They had eighteen cases with thermographic localization of suspected either primary or secondary hyperparathyroidism taken to surgery and seventeen had abnormal parathyroid tissue. Samaan, et al[5] were less successful with a record of only six out of sixteen correct localizations. They favored venous catheterization with selected parathormone levels. The latter is an invasive procedure which is much more time consuming and expensive. If more successful localization of large and small parathyroid adenomas by thermography can be documented[6] it could prove to be very valuable pre-operatively in selected patients.

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U of A
Grand Rounds

Scabies:

The Diagnostic Dilemma

Stephen A. Estes, M.D.

CASE PRESENTATION

A 26-year-old man entered the dermatology clinic with an eight month history of a severely pruritic dermatosis. Prior to this visit he had consulted a total of five physicians who had prescribed a wide variety of therapies including antihistamines, sedatives, topical and systemic corticosteroids. None of the medications provided any relief and the man was desperate. The last doctor he had seen suggested psychiatric consultation if his drug therapy was unsuccessful. The patient denied a history of skin disease or atopic conditions.

Physical exam demonstrated a generalized dermatitis sparing the face. Further inquiry into the family setting revealed others with skin problems. His wife had a rash and both children had been treated by different doctors for recurrent impetigo. The children were examined and had evidence of an excoriated dermatitis involving the hands, wrists, elbows, axillae and buttocks as well as the lower extremities. Several areas showed evidence of pyoderma. Scrapings from the lesions of the father and both children revealed sarcoptes scabiei. The entire family was treated for scabies and the children received concomitant therapy for their documented staphylococcal and streptococcal pyoderma. An eleven month period of skin related illness came to an end for this family. Nine physicians including pediatricians, internists, emergency room physicians, family practitioners and a dermatologist had seen one or two members of this family at some time or another during the course of this problem.

DISCUSSION

Marion B. Sulzberger, one of the great men in American dermatology, stated, "It is understandable and right that killers such as heart disease, cancer and stroke should receive great attention from medicine, from foundations, and from government. But in the rush to try

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to improve the management of fatal and crippling diseases, and to eliminate great infectious scourges, we are likely to forget the importance of seemingly trivial infestations such as scabies and pediculosis. It is necessary also to realize that scabies goes undiagnosed many times more often than heart disease, cancer or stroke. Too many physicians and health care professionals trained and practicing during a period when scabies is rare, are likely to miss and mismanage many cases during the epidemic upsurges - and thus prolong suffering and propogate the endemics and epidemics."[1]

Sarcoptes scabiei var hominis continues to cause disease in epidemic proportions in the U.S.[2,3] Many physicians feel that the problem is continuing to increase and that we haven't yet seen the peak of the current epidemic.[2]

Sarcoptes scabiei is a parisitic mite that lives in the outermost layer of the human skin, i.e. the strateum corneum. It's entire life cycle is spent on the human host where the fertilized female lays eggs, which hatch into larvae, that moult into nymphs and subsequently adults. The life cycle from eggs to adults is 10-14 days.[4]

Scabies can be difficult to diagnose. Suspicion is the key. Suspect scabies whenever the patient presents with a skin problem and one or more of the following criteria: 1) epidemiological pattern, 2) prominent nocturnal pruritus and 3) a consistent cutaneous eruption.

Scabies is spread by close contact. Etiological factors that have been identified as related to scabies include: over-crowding, sleeping together, sharing clothes and sharing towels.[5] Though these factors would suggest that poverty and poor hygiene facilitate the spread of scabies, epidemics of scabies in the U.S. and elsewhere show no respect for socioeconomic status. Thus, scabies is frequently seen within the context of families, sexual partners, amongst school aged children, and institutionalized people.

Many cutaneous disorders cause notable pruritus at night. In scabies the nocturnal pruritus is usually dramatic. Many times the patient will offer this information spontaneously. In a study of 1,015 patients with scabies, 82% presented with nocturnal pruritus.[6] Ask the patient if they wake up scratching. In other dermatoses they usually don't - in scabies they frequently do. The patient's scratching activity is often enough to produce bleeding. Ask specifically if they've noticed blood on sheets, pajamas, or underwear. Hemorrhagic crusts on physical exam attest to the intense pruritus. Such vigorous excoriating is relatively rare in other dermatoses. Exact reasons for the severe nocturnal pruritus are not clear. The human saroptic mite is temperature sensitive and known to increase its activity with higher temperatures.[7] Some people believe the prominent nocturnal pruritus is due to increased skin temperatures under the bed covers.

The cutaneous eruption of scabies should be suspected when there is evidence of pruritus (excoriations), and pleomorphic lesions with a characteristic distribution. Papules, burrows or runs, scales, crusts, vesicles, pustules, bullae, excoriations, and sometimes nodules are all types of lesions that may be seen with scabies.[8] Lesions of different types and at different stages in their evolution are frequently present. Linear excoriations, hemorrhagic crusts, and superficial ulcerations attest to the pruritic nature of the infestation. Specific areas where the eruption occurs include: finger webs, hands, wrists, elbows, axillae, buttocks, women's breasts, and men's genitals. A thorough cutaneous examination may reveal other areas of involvement. Scabies does not involve the face except in young children. The reasons for these peculiar localizations are uncertain; however, temperature and the characteristics of the skin in these areas are suspected factors.

Finger webs, wrists, and elbows are the most productive areas to examine for burrows or runs. Many times you may feel a burrow with your finger tip before you see it. Frequently, some brown-black material will be seen in the burrows and this represents feces, eggs, or mites. A burrow on the wrist is shown in Figure 1. Such lesions are the ones to scrape to clinche the diagnosis by demonstrating the mite in the outermost layer of skin.

The procedure to demonstrate scabies becomes easier with practice and the key is finding and selecting the right lesion. Place a drop of mineral oil on the skin lesion to hold the fragments of skin in the area and with a scapel blade superficially shave off or scrape off the strateum corneum.[9] Transfer the material to a glass slide and examine under the microscope. A positive skin scraping may contain eggs, or feces, or mites and frequently all three are seen as in Figure 2.

The diagnosis of scabies is often missed. This is because it can be confused with numerous other pruritic dermatoses. Some of the most common misdiagnoses include: atopic dermatitis, neurodermatitis, contact dermatitis, impetigo or pyoderma, papular urticaria and insect bites. Patients with atopic dermatitis have predominantly a flexural symmetrical, chronic dermatitis with lichenified areas of skin and a long history of the problem waxing and waning. Neurodermatitis usually presents as chronic fixed areas of lichenified, excoriated skin. Contact dermatitis presents acutely with a history of exposure, prominent vesiculation and edema and the eruption in areas of exposure. Impetigo or pyoderma may accompany scabies in children and is a common complication of scabies. The absence of a pruritic eczematous process in classical areas, and other scabietic lesions helps to distinguish pyoderma alone from secondarily infected scabies. Suspect scabies in cases of recurrent pyoderma. Papular urticaria presents as pruritic monomorphic papules, asymmetrically distributed, sparing the hands and feet, with a tendency to wax and wane. Children get it most often after insect bites and there is no epidemiological pattern. Insect bites can be differentiated from scabies by the sudden onset of asymmetrical monomorphic lesions that are either in exposed areas, groups or clusters.

How should scabies be treated? Three remedies and different treatment schedules are available. Gamma benzene hexachloride (Kwell, Gamene, or Lindane), crotamiton (Eurax) and rarely sulfur ointment are used in

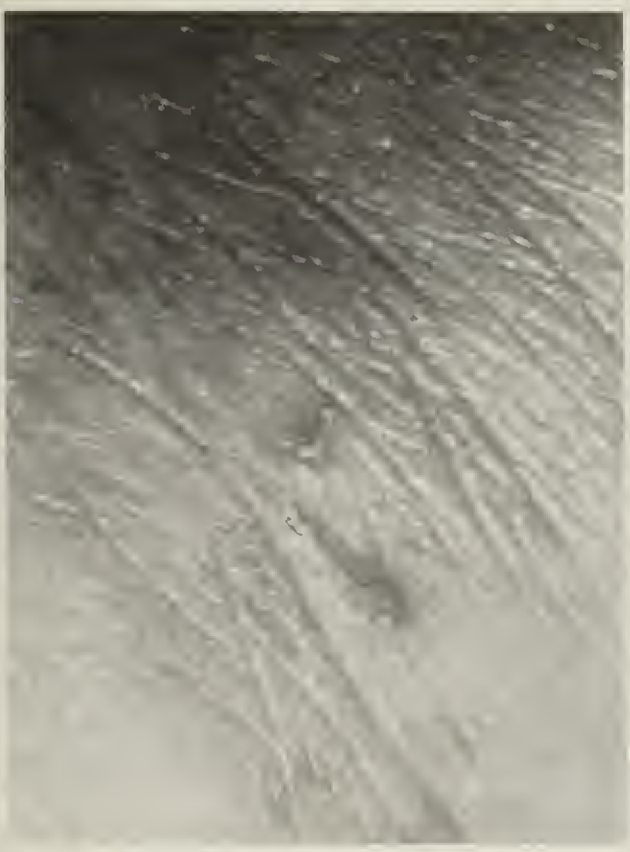

FIGURE 1
Close up of scabietic burrow.

the treatment of scabies. Gamma benzene hexachloride (GBH) is applied from the neck to the toes covering all areas of skin. It is important to stress application of the medication to all areas - not just the eruption. The lotion spreads easily and 2 oz should be adequate for an adult. This is left on overnight and washed off after 12 hours.[10] The next day all clothing, towels, and sheets should be washed in the hot cycle of the laundry. The medication should be reapplied a second time 5 to 7 days later. Repeated applications of GBH beyond the therapeutic recommendation, may give rise to irritation and possible CNS toxicity.[11] Treat all members of the household whether symptomatic or not. Remember, if an impregnated mite got on someone today, they might not develop symptoms for two weeks or longer.

I tell patients that they will be 50% better in 48 hours, but they will still have some pruritus for days to weeks. This is known as post-scabietic pruritus. After treatment the organisms are dead but are still in the strateum corneum. The patient is sensitized to them and will continue to itch somewhat until they are gone. The turnover time of the strateum corneum is 14 days, so pruritus can be expected to continue for at least two weeks and sometimes longer. I provide systemic antihistamines and sometimes topical steroids for this period.

Crotomiton (Eurax) has antipruritic activity, comes in a cream which is applied for a 48 hour period and then washed off. For small children and pregnant women this agent is recommended because of the toxicity reports about GBH.

Sulfur ointment in a 5 to 10% concentration smells terrible, stains and can be irritating. It also is applied for 48 hours.

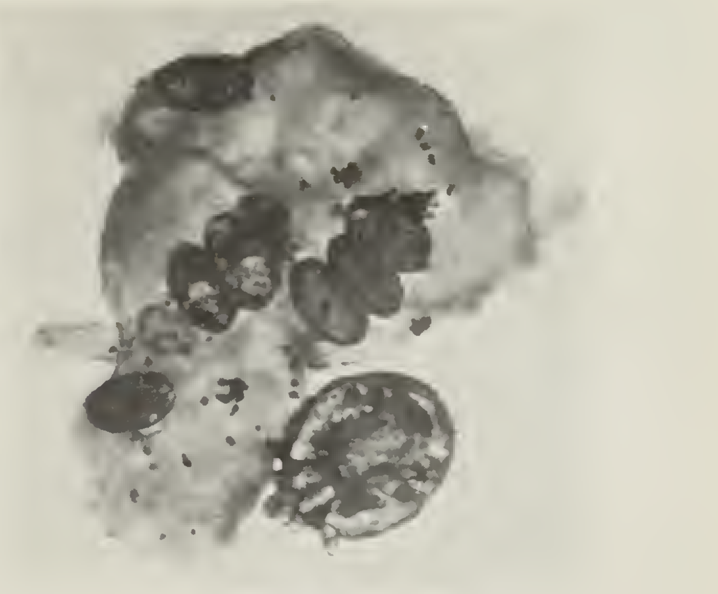

FIGURE 2
Scraping demonstrating mite, eggs, fecal pellets.

Pyoderma, if present, should be treated with systemic antibiotics.

To reiterate; the patient should leave your office with an understanding about what they are up against, knowledge as to how to treat it, an appropriate amount of medication for those in the house, an understanding as to why asymptomatic members of the household should participate in the therapy, and the knowledge as to why they will continue to itch for a while and the medication specifically for this problem.

Remember, scabies can be a difficult diagnosis to make. It is a great imitator of numerous other skin conditions, and at times it eludes even the best dermatologists. Above all be suspicious of scabies when presented with a puzzling skin problem with an epidemiological pattern, nocturnal pruritus, and a pleomorphic eruption that involves the known areas of prediliction.

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The Spectrum of Continuing Medical Education

It certainly is a buyer's market for the physician seeking continuing medical education programs! The plethora of pamphlets, brochures, and announcements of upcoming programs can obliterate the top of one's desk. Physicians have a choice of programs sponsored by state medical societies; national medical organizations; private interest groups; travel agencies; federal, state, and local governments; numerous universities; community hospitals; and pharmaceutical companies.

The concept of continuing education is not exclusively in the domain of medicine. Engineers, lawyers, accountants, and assembly line workers are actively involved in maintaining and improving skills. The federal government recognizes the need for continuing education and provides financial incentives to this end through the "tax deductible" mechanism. Industrial countries of Europe, particularly West Germany, have a national policy on continuing education to meet the needs for changing industrialization.

Continuing medical education (CME) is fast becoming "national policy" in the United States, too. As of August 1, 1977, medical practice acts in nineteen states give the state board of medical examiners authority to require evidence of CME as a condition for reregistration of the license to practice medicine.[1] Beginning February 28, 1979, each licentiate in Arizona will need to show proof every three years of completion of 60 hours of CME in one's specialty field of practice. Continued membership in ArMA requires 150 hours of credit over three years, with a minimum of 60 hours of Category 1 credit.

As an accredited sponsor of continuing medical education programs, the College of Medicine at the University of Arizona feels a special commitment to the physicians of our state in providing quality continuing medical education. The Office of Continuing Medical Education is continually developing and implementing medical education programs to meet a wide variety of physician needs. A number of different activities fall within the purview of continuing medical education.

Formal conferences are carefully planned to meet sound educational objectives. As part of the learning experience, teaching materials are made available to each participant. Participants also have the chance to evaluate conferences at the conclusion. Some conferences include the opportunity to take a self-assessment test and utilize audiovisual materials.

September will see the implementation of a Basic Science Review program in Phoenix. The program will run for nine months and will be held the second Saturday of each month for a full day. Each segment will concentrate on a specific area of the basic sciences and the physician can select specific areas for review. A Clinical Science Update will follow on the second Sunday of each month.

The Physician's Desert Retreat is a program prepared and tailored for the individual physician to offer a period of self-assessment and independent study. This program is designed to offer the practicing physician numerous individual options for participation. Included in the options are independent study programs, personal physical examination and health assessment, legal audit, and retirement and fiscal assessment.

The "Mini Residency" is a special program designed to offer the physician the opportunity to get away and return to the academic institution in order to work in clinical departments, divisions, and sections. Each applicant will be involved in organizing a personal curriculum in fields of special interest. The period of residence is utilized to develop new knowledge and skills through a combination of rounds, conferences, research, and conversations with faculty and housestaff.

This month a new calendar of continuing medical education events sponsored by the College of Medicine, Office of Continuing Medical Education will be mailed to all physicians. Approximately thirty conferences and programs will be presented, and all are accredited for Category I. We look forward to serving you during the year ahead.

Anthony F. Vuturo, M.D.
Associate Dean
Office of Continuing
Medical Education

Louis J. Kettel, M.D.
Dean
College of Medicine

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1. Continuing Medical Education. *JAMA*, Dec. 26, 1977, Vol. 238, No. 26, P. 2804.

Auxiliary Highlights

Noteworthy items from the Auxiliary's 48th Annual Meeting in Tucson included —

10% of the total 1571 membership registered as convention participants.

An allocation increase to six Arizona delegates to the National Convention was not only earned but all voting positions as well as alternates were filled for the June 18-21 event in St. Louis. National president, Mrs. Chester L. Young, personally extended invitation to attend and reviewed long range planning aspects.

A.M.A. Education and Research Funds totaled 11,744.00 for the year with 7,094.00 of the amount being designated for the University of Arizona.

The Hamer Education Loan Fund assessment of members was officially discontinued.

Funding support was approved for the recently established Medical Auxiliary Emergency Loan Fund for Arizona students at the U. of A. School of Medicine. It is to be provided through voluntary gifts from Auxilians.

Funds raised for health-related community projects tallied 26,768.00.

Finalized incorporation prompted the new state seal which was unveiled with the corporate name as added for logo design.

The handsomely crafted new president's pin was presented to Mrs. James L. Parsons. She starts the revolving possession by state presidents who will wear it as the identifying badge of the Arizona Medical Association Auxiliary, Inc. The preceding pin worn by 26 former state presidents has been retired to framed display at the ArMA building.

Dr. Richard L. Dexter represented ArMA and spoke to the merits of several Auxiliary programs. He encouraged even more activity and program, expanding memberships, and increased coordination of organized efforts among physicians and spouses.

And so, as two state presidents from Flagstaff retired, two state presidents from Tucson picked up the reins. In true western style, it would appear they've got us covered!

Mrs. Melvin W. (Jean) Phillips
Auxiliary Editor

ARMA

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Richard L. Dexter, M.D.

President Elect
William E. Crisp, M.D.

Secretary
John A. Ash, M.D.

Executive Director
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John Stoner III, M.D.
William C. Weese, M.D.
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1978 Annual Meeting Highlights

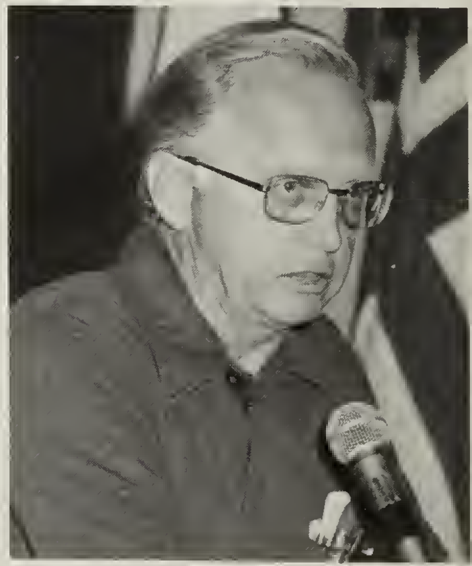
The House of Delegates before it all begins

Mrs. Joseph H. Reno, Past Pres. ArMA Auxiliary 1977-78

Joseph F. Boyle, M.D., Trustee, AMA

Speaker of the House, Robert A. Price, M.D.

The House in action.



Max Wertz, M.D.

Past Presidents: L to R, seated Harry E. Thompson, M.D.; Charles E. Smith, M.D.; John F. Kahle, M.D.; Abe I. Podolsky, M.D.; Harold W. Kohl, Sr., M.D. Standing: James E. O'Hare, M.D.; Robert E. Hastings, M.D.; Arthur V. Dudley, M.D.; Clarence E. Yount, Jr., M.D.; William C. Scott, M.D.; Edward Sattenspiel, M.D.; William G. Payne, M.D.; Dermont W. Melick, M.D.; Arnold H. Dysterheft, M.D.; William B. Steen, M.D.; Robert Carpenter; W. Albert Brewer, M.D.

Richard L. Dexter, President ArMA 1978-1979

Mrs. James L. Parsons; Mrs. Chester L. Young, Pres., AMA Auxiliary and Mrs. Joseph H. Reno.

Mrs. James L. Parsons, President ArMA Auxiliary 1978-79

Neil O. Ward, M.D.

L to R: Wayne Beck, M.D.; Victor Zannis, M.D., resident delegates; Kathy Kolt and Gae Rodke, medical student delegates.

Dr. Dexter presented 50 Year Club Awards to Dr. Lazarus Manoil, M.D. and Robert M. Stump, M.D.

Mrs. Thurman K. Leonard, Chairwoman, ArMA Auxiliary, AMA-ERF presents Dr. Louis Kettel, Dean, U of A College of Medicine, with their annual contribution.

H. Belton P. Meyer, M.D., A.H. Robins Award for Community Service.

Dr. Dexter presents Dr. Kahle with his Past President's Award as Mrs. Dexter looks on.

Dr. & Mrs. Richard L. Dexter

Dr. Belton Meyer and family.

Dr. Daniel T. Cloud, AMA Officer, Secretary-Treasurer

Dr. Dexter and Mr. & Mrs. Walt Davis

Dr. Dexter and family.

L. to R.: Dr. & Mrs. Wm. Scott, Dr. Jack Layton, Mrs. Seymour I. Shapiro, and Dr. & Mrs. Edward Sattenspiel.

L. to R.: Richard L. Dexter, M.D., Charles Henderson, Misty Coumbe, William Crisp, M.D.

Dr. Dexter and friends.

Jokichi Takamine, M.D., AMA Delegate from California, Speaker at the President's Banquet.

And they danced, and they danced, and they danced.

The House still in action.

The Arizona Medical Association, Inc.
Resume of the House of Delegates
1978 Annual Meeting — April 29, 1978

Adjourned meeting of the House of Delegates of the Arizona Medical Association, Inc. held in the Guadalajara Ballroom of the Marriott Hotel, Tucson, Arizona, Saturday, April 29, 1978 convened at 8:06 a.m., Robert A. Price, M.D., Speaker of the House, presiding.

CREDENTIALS — The Credentials Committee reported a quorum present and the House duly constituted.

ROLL CALL — On the roll call 127 Delegates (and/or Alternates) and 20 members of the Board of Directors were present.

MINUTES — Minutes of the meeting of the House of Delegates held April 30, 1977 were approved as distributed.

ELECTION OF OFFICERS — The following officers were elected for a term of one year.

President-Elect	W.E. Crisp, M.D.
Vice President	J.T. Clymder, M.D.
Secretary	J.A. Ash, M.D.
Treasurer	N.L. Robles, M.D.
Speaker of the House	R.A. Price, M.D.
Editor-In-Chief	M.B. Block, M.D.

The following were elected for the term January 1, 1979 to December 31, 1980.

Delegate to AMA	A.V. Dudley, M.D.
Alt. Delegate to AMA	W.C. Scott, M.D.

ELECTION OF DISTRICT DIRECTORS — The following District Directors were elected.

Central Dist. Director	R.L. Collins, M.D. (1978-1980)
Central Dist. Director	J.A. Austin, M.D. (1978-1980)
Central Dist. Director	P. Levy, M.D. (1978-1981)
Central Dist. Director	H.N. Munhall, M.D. (1978-1981)
Central Dist. Director	N.O. Ward, M.D. (1978-1981)
Northeastern Dist. Dir.	D.L. Neel, M.D. (1978-1981)
Southern Dist. Dir.	J.M. Layton, M.D. (1978-1981)

REFERENCE COMMITTEE ON RESOLUTIONS

Report of the Reference Committee on Resolutions as deleted, amended or as otherwise disposed of, adopted with the following actions taken on motions regularly made and carried.

Resolution 1-78

Subject: THE ECONOMIC ORGANIZATION FOR ARIZONA PHYSICIANS. ARIZONA PHYSICIANS GUILD

WHEREAS, The Physicians of Arizona need an effective economic organization capable of bargaining for all levels of physicians who so desire and

WHEREAS, The Arizona Medical Association as constituted can not be an effective economic organization, does not promise to be in the future and can not legally do collective bargaining in its present form and

WHEREAS, Many physicians whether salaried of self-employed want someone to represent them now and

WHEREAS, The self-employed physicians of this state need resolution of economic problems such as; many insurers not performing to contract and Federal and State regulatory bodies determining medical practice economics, therefore be it

RESOLVED: That the Arizona Medical Association in concert with the Professional Guild of Arizona create an independent collective bargaining organization and be it further

RESOLVED: That the present members of the Medical Economics Committee of the Arizona Medical Association be invited to become the temporary executive committee for the new organization until a general election can be held and be it further

RESOLVED: That the Arizona Medical Association will foster the growth of the new organization by referring economic problems to it (including negotiations with the Industrial Commission of Arizona) and encouraging membership.

REFERRED TO THE BOARD OF DIRECTORS REQUESTING THAT THEY REPORT BACK TO THE HOUSE AT THE NEXT REGULAR OR SPECIAL MEETING WITH SPECIFIC RECOMMENDATIONS REGARDING THE FOUNDATION OF A SEPARATE AND FREESTANDING FULLY INDEPENDENT BARGAINING UNIT PRIOR TO THE CREATION OF SUCH A UNION, 4/29/78

Resolution 2-78

Subject: 1979 CALENDAR YEAR BUDGET OF INCOME AND EXPENSE

WHEREAS, It is customary for the House of Delegates to approve the budget of Income and Expenditures for the next succeeding calendar year of the Arizona Medical Association, Inc.; therefore be it

RESOLVED, That the following Budget of Income and Expenditures for the calendar year 1979 be adopted:

	INCOME	EXPENDITURES	
General Dept.	$595,605.00	$578,400.00	$ 17,205.00
Committee Dept.	83,100.00	108,100.00	(25,000.00)
Annual Meeting Dept.	60,600.00	56,640.00	3,960.00
Publishing Dept.	72,470.00	68,430.00	4,040.00
TOTAL	$811,775.00	$811,570.00	$ 205.00

and be it further

RESOLVED, That the annual dues of the Arizona Medical Association, Inc. be $250 for Active members, with $230 going to General Department Budget and $20 going to the Publishing Department Budget; and be it further

RESOLVED, That the Service member dues be $62.50 with $42.50 going to the General Department Budget and $20 going to the Publishing Department Budget; and be it further

RESOLVED, That the Intern or Resident Active member dues be $25 with $5 going to the General Department Budget and $20 going to the Publishing Department Budget.

ADOPTED, 4/29/78

Resolution 3-78

Subject: MALPRACTICE INSURANCE AS PREREQUISITE FOR HOSPITAL STAFF MEMBERSHIP

WHEREAS, The Arizona Medical Association has made its attitudes in reference to compulsory malpractice insurance eminently clear in Resolution 2-77 adopted April 30, 1977, and

WHEREAS, Current court decisions may eventually negate the physician's right to hospital staff privileges if uninsured, therefore be it

RESOLVED, That the Arizona Medical Association, upon request from the hospital medical staff, will enter into negotiation with any Arizona hospital imposing such a requirement as malpractice insurance as a prerequisite for hospital staff membership on its physician staff members, and be it further

RESOLVED, That should such negotiations fail, ArMA will assist, to the level of its ability, in challenging the requirement in the courts of law.

SUBSTITUTE RESOLUTION ADOPTED, 4/29/78

Resolution 4-78

Subject: FEDERAL DRUG ADMINISTRATION PACKAGE INSERTS

NOT ADOPTED, 4/29/78

Resolution 5-78

Subject: PARA-MEDICAL DISCIPLINES

NOT ADOPTED, 4/29/78

Resolution 6-78

Subject: LAETRILE

RESOLVED, That the Arizona Medical Association support the position of the American Medical Association as expressed in Substitute Resolution 85 adopted by the AMA House of Delegates during its June, 1977 Annual Convention as follows:

"RESOLVED, That it is the position of the American Medical Association that Laetrile is a substance which has no proven value as a drug for the treatment of cancer".

SUBSTITUTE RESOLUTION ADOPTED, 4/29/78

Resolution 7-78

Subject: PROVIDING COPIES OF PATIENTS' HOSPITAL BILLS TO PHYSICIANS

WHEREAS, The percentage of the Gross National Product used for health care is rising; and

WHEREAS, Cost containment without sacrificing quality of care is necessary for the survival of the present pluralistic medical care delivery system; and

WHEREAS, Physicians order most of the care given to the hospitalized patient; therefore be it

RESOLVED, That the Arizona Medical

Association work with the Arizona Hospital Association to see that each physician is apprised of hospital charges in a meaningful form for each of his patients, the mechanism to be worked out between medical staff and administration; and be it further

RESOLVED, That hospitals be urged to follow the recommendations of the Arizona Hospital Association, to wit:

1. That hospitals be encouraged to provide a charge manual at each nursing station, in the hospital lobby, in each physician's lounge, and in medical records.
2. That a specific source be indicated to rereceive questions, comments, or concerns relating to charges.
3. That the charge manual be updated regularly in order to contain the most current information; and be it further

RESOLVED, That the Arizona Medical Association recommend that hospital governing boards, administrators, and medical staffs consult on a regular basis about rates and charges and mutually cooperative in efforts to find ways to make quality medical care cost effective.

SUBSTITUTE RESOLUTION ADOPTED, 4/29/78

Resolution 8-78

Subject: REDUCED DUES FOR THE NEW PHYSICIAN JUST STARTING PRACTICE IN ARIZONA

WHEREAS, We believe all physicians should participate in organized medicine; and

WHEREAS, A number of economic factors can work against a newly established physician finding membership in the Arizona Medical Association immediately affordable; therefore be it

RESOLVED, That the Articles of Incorporation and Bylaws Committee of this Association be directed to prepare the necessary bylaws changes that would make it possible for the newly established physician to become a member of the Association by reduction of dues structure as determined by the Board of Directors and that the new dues structure be acted upon at the next regular or special session of the House of Delegates; and be it further

RESOLVED, That the component county medical societies and the American Medical Association be encouraged to adopt a similar dues reduction in coordination with the state Association.

SUBSTITUTE RESOLUTION ADOPTED, AS AMENDED, 4/29/78

Resolution 9-78

Subject: DISTRIBUTION OF REPORT: "DIVIDED THEY WERE CONQUERED"

WHEREAS, The Executive Committee of the Arizona Medical Association has circularized to Arizona physicians "Divided They Were Conquered", impressions from a study of the British National Health Service, November 1977, by Bruce E. Robinson, Executive Director, and

WHEREAS, This concise, timely, and informative report examines with objectivity the many facets of a nationalized health care system which continues to cause grave concern the world over; therefore be it

RESOLVED, That a copy of this report be sent to each State Medical Association (with permissin for re-publication), each U.S. Senator and Representatives, and a copy supplied to each Delegate and Alternate Delegate at the American Medical Association Annual Convention in St. Louis, Missouri, June 1978.

SUBSTITUTE RESOLUTION ADOPTED, AS AMENDED, 4/29/78

Resolution 10-78

Subject: HEALTH CARE COST CONTAINMENT

WHEREAS, The Arizona Medical Association has always been dedicated to provision of the highest quality of medical care and is aware that health care costs are accelerating in our inflationary economic environment which requires the need for cost containment wherever reasonable so long as there is preservation of high standards of medical care; and

WHEREAS, Cost containment is clearly a subject of intense interest at every level of government; and

WHEREAS, Widespread consumer and medical professional concern is continuing to grow; and

WHEREAS, The summary report of the independent National Commission on the cost of Medical Care established by the American Medical Association is now available for review; and

WHEREAS, The report of the Arizona Medical Association's Ad Hoc Committee on Health Care Cost has been completed (see attachment); therefore be it

RESOLVED, That the Arizona Medical Association affirm its position to participate in all reasonable cost control efforts concerning provision of health care without reduction in availability of quality medical care; and be it further

RESOLVED, That ArMA support and encourage the concept of teaching cost effectiveness in all residency training programs in Arizona; and be it further

RESOLVED, That any efforts to curtail costs by reducing quality of care or availability of care be resisted, exposed, and rejected as unreasonable efforts to compromise standards of medical excellence.

SUBSTITUTE RESOLUTION ADOPTED, 4/29/78

Resolution 11-78

Subject: DIRECTOR OF HEALTH DEPARTMENT FOR SANTA CRUZ COUNTY

WHEREAS, It appears that the Director of the Health Department of Santa Cruz County, Arizona, is not a medical doctor

WHEREAS, Sound health and medical practice dictate the need for professionally educated, qualified, and licensed medical personnel to direct the operations of local health services; and

WHEREAS, The need for professionally qualified medical doctors in such positions is recognized by our state legislature in consistently providing that city and county health officers be practicing physicians and licensed physicians;

WHEREAS, There are several licensed medical doctors practicing medicine in the County of Santa Cruz, Arizona at the present time, and it appears that one or more of such practicing physicians are available to fill the post of Director of Health Department of Santa Cruz County; now, therefore be it

RESOLVED, That the Arizona Medical Association join the Santa Cruz Medical Society in recommending to the Board of Health and the County Supervisors of Santa Cruz County that it retain, as Director of the Health Department, a qualified licensed doctor who is a practicing physician in Santa Cruz County.

ADOPTED, 4/29/78

Resolution 12-78

Subject: AMA COMMISSION ON THE COST OF MEDICAL CARE

NOT ADOPTED, 4/29/78

Resolution 13-78

Subject: NATIONALIZED HEALTH CARE, AMA SPONSORED LEGISLATION FOR NHI

NOT ADOPTED, 4/29/78

REFERENCE COMMITTEE ON AMENDMENTS

Report of the Reference Committee on Amendments as deleted, amended or as otherwise disposed of, adopted with the following actions taken on motions regularly made and carried.

(NOTE: All bracketed, italicized words represent deletions; all fully capitalized words are new material)

Resolution A-1-78

Subject: MEMBERSHIP OF PHYSICIAN'S ASSISTANTS IN THE ARIZONA MEDICAL ASSOCIATION

RESOLVED, That Chapter II, Section 3(E) be amended to read as follows:

> (E) Affiliate Members. Affiliate members may be elected to this Association by the Board upon recommendation by county societies from (1) those doctors of medicine who are duly accredited in Mexico, or in foreign countries, engaged in medical missionary and similar educational philanthropic work, (2) Arizona dentists who are members in good standing of their local and state societies, (3) pharmacists who are active members of their Arizona State Association, (4) teachers of medicine and allied sciences who are not eligible to other membership in this Association, (5) former active members of this Association, who are now in practice in another state, [*and*] (6) retired physicians holding degree of Doctor of Medicine and residing in Arizona, AND (7) THOSE PERSONS CERTIFIED AS PHYSICIAN'S ASSISTANTS AND RESIDING IN ARIZONA.
>
> Rights. Affiliate members shall enjoy the privileges of attending the scientific meetings. They shall not have the right to serve as Delegates, or to hold elective office. They shall pay no dues and not be entitled to receive any publication of the Arizona Medical Association except by subscription.

ADOPTED, 4/29/78

Resolution A-2-78

Subject: DISTRICT DIRECTORS - BOARD OF DIRECTORS COMPOSITION

RESOLVED, That Chapter V, Section 6, be amended to read as follows:

> Section 6. Geographic Distribution and Election of District Directors: There shall be six state districts which shall be designated as Central (Maricopa County); Northeastern (Apache, Gila and Navajo Counties); Northwestern (Coconino, Mohave and Yavapai Counties); Southeastern (Cochise, Graham, Greenlee and Santa Cruz Counties); Southern (Pima County); and Southwestern (Pinal and Yuma Counties). [*four of the districts, Northeastern, Northwestern, Southeastern, Southwestern shall have one Director elected from each; the Southern district shall have three Directors; and the Central district shall have five Directors.*] EACH DISTRICT SHALL BE REPRESENTED BY ONE DIRECTOR FOR THE FIRST 200 ACTIVE MEMBERS OR FRACTION THEREOF, AND ONE

DIRECTOR FOR EACH ADDITIONAL 200 ACTIVE MEMBERS OR FRACTION THEREOF, AS DETERMINED ON OCTOBER FIRST PRECEDING THE ANNUAL MEETING. Terms of District Directors shall not run concurrently.

ADOPTED, 4/29/78

Resolution A-3-78

Subject: PROFESSIONAL COMMITTEE SECTION DESIGNATION

RESOLVED, That Chapter VII, Section 4 (n) be amended to read as follows:

(n) Professional - This committee shall consist of a Chairman and at least ten members. A Chairman shall be appointed annually from among the members who have served for at least three years on the committee.

The committee will be responsible for all professional aspects of medicine, other than the economics and legislative areas and those areas covered by other standing committees, and comprise sections on Aging and General Medicine; Allied medical groups; Athletic medicine; Disaster medicine; [*Drug abuse*]; Emergency Care; Medicine and Religion; Mental health AND SUBSTANCE ABUSE: Poison control; Public health; Rehabilitation Medicine; Safety and such other sections as may be indicated from time to time. It shall interest itself in medico-legal problems. Further, an advisor to the [Woman's Auxiliary of ArMA] ARIZONA MEDICAL ASSOCIATION AUXILIARY, INC. shall be designated (to be chosen from the same geographic area of the state as the current President of the [Woman's] Auxiliary).

Each committee member, except the Chairman, shall serve as Chairman of a section for a particular activity. The Chairman may also serve as the Chairman of a section. The section Chairman shall be appointed by the President of the Association, with advice of the Chairman of the Professional Committee.

ADOPTED, 4/29/78

Resolution A-4-78

Subject: CHAPTER VII - STANDING AND SPECIAL COMMITTEES - SECTION 4. COMPOSITION OF STANDING COMMITTEES: - AMENDMENT

RESOLVED, That Chapter VII - Standing and Special Committees - Section 4(b) be added to read:

(b) Claim Review: - THIS COMMITTEE WILL CONSIST OF A CHAIRMAN AND AT LEAST EIGHT MEMBERS WHO SHALL BE APPOINTED WITH DUE CONSIDERATION TO SPECIALTY AND GEOGRAPHIC REPRESENTATION. THIS COMMITTEE SHALL REVIEW MALPRACTICE CLAIMS AGAINST PHYSICIANS AND OTHER LICENSED HEALTH CARE PROVIDERS AS SPECIFIED IN AGREEMENTS ENTERED INTO BETWEEN THE ARIZONA MEDICAL ASSOCIATION AND COMPANIES PROVIDING PROFESSIONAL LIABILITY INSURANCE IN THE STATE OF ARIZONA AND SHALL PROVIDE MEDICAL OPINION AND ADVICE TO SUCH COMPANIES ON INDIVIDUAL CLAIMS AS WELL AS GENERAL CLAIM MATTERS.

ADOPTED, 4/29/78

Resolution A-5-78

Subject: CHAPTER VII - STANDING AND SPECIAL COMMITTEES - SECTION 4. COMPOSITION OF STANDING COMMITTEES: - AMENDMENT

RESOLVED, That Chapter VII - Standing and Special Committees - Section 4.(r) be added to read:

(r) Underwriting Review: - THIS COMMITTEE SHALL CONSIST OF A CHAIRMAN AND AT LEAST EIGHT MEMBERS WHO SHALL BE APPOINTED WITH DUE CONSIDERATION TO SPECIALTY AND GEOGRAPHIC REPRESENTATION. THIS COMMITTEE SHALL FUNCTION AS A PEER REVIEW PANEL TO ASSIST WITH UNDERWRITING OF MALPRACTICE INSURANCE COVERAGE FOR PHYSICIANS AND OTHER LICENSED HEALTH CARE PROVIDERS AS SPECIFIED IN AGREEMENTS ENTERED INTO BETWEEN THE ARIZONA MEDICAL ASSOCIATION AND COMPANIES PROVIDING PROFESSIONAL LIABILITY INSURANCE IN THE STATE OF ARIZONA.

ADOPTED, 4/29/78

Resolution A-6-78

Subject: VOLUNTARY MEMBERSHIP - AMERICAN MEDICAL ASSOCIATION

NOT ADOPTED, 4/29/78

Resolution A-7-78

Subject: VOLUNTARY MEMBERSHIP - ARIZONA MEDICAL ASSOCIATION

NOT ADOPTED, 4/29/78

Meeting adjourned Sine Die at 12:26 p.m.

A-6-78

The following is the roll call vote of Resolution A-6-78 of April 29, 1978. A 2/3rds vote was necessary to change the Bylaws as requested in Resolution A-6-78. A yes vote is a vote in favor of the Resolution to discontinue mandatory membership in the AMA. A no vote favored the continuation of unified membership between ArMA and the AMA.

APACHE COUNTY: Two delegate votes

Robert D. Martin		No
Daniel L. Neel		No

COCHISE COUNTY: Two delegate votes

Kenneth Dregseth		Yes
Paul T. Lenio		Absent

COCONINO COUNTY: Four delegate votes

Thomas S. Davee		Yes
John Hildebrand		No
Herbert Fredell		No
Richard T. McDonald		No

GILA COUNTY: Two delegate votes

David B. Gilbert		No
Watson M. Lacy		Absent

GRAHAM COUNTY: Two delegate votes

Earnest R. Forgach		No
Thomas Griffin		Absent

GREENLEE COUNTY: Two delegate votes

Lyle Boyea		Absent
J.S. Magill	(Alt)	No

MOHAVE COUNTY: Two delegate votes

Joseph R. McAndrew		No
Morris E. Powell		No

NAVAJO COUNTY: Two delegate votes

Harry Beckwith		No
Dale Hubbard		Absent

PINAL COUNTY: Two delegate votes

H. Howard Holmes		Yes
Raymond C. Pogee	(Alt)	Yes

SANTA CRUZ COUNTY: Two delegate votes

Harry Drummond		Absent
Frederic Ruskin		Yes

YAVAPAI COUNTY: Three delegate votes

E. Charles Bill		No
Ronald Gardner		Yes
John Oakley		Yes

YUMA COUNTY: Three delegate votes

Frank Herrara		Yes
Paul Slosser		Yes
Ronald Christ	(Alt)	Yes

MARICOPA COUNTY: Seventy-three delegate votes

John Ash		No
Earl Baker		No
Gerald Becker		No
Avi Ben-Ora		Yes
Ted Blackwelder		No
Paul Borgeson		Yes
Robert Brazie		Yes
Jack E. Brooks		No
Donald Buffmire		No
John Bull		Yes
Lewis Claypool		Yes
Richard Collins		Yes
Charles Cooke		Yes
Don Schaller	(Alt)	Yes
Richard Daley		Yes
C. Truman Davis		Yes
Frank DePaoli		Yes
Sherwood Denton		No
Walter Eicher		No
Charles Finney		Yes
D. Hood Franks		Yes
Ronald Garlikov		Yes
Michael Geyser		Yes
James Giangobbe		Yes
Alan Gordon		No
Thomas Hartley		Yes
William Helme		No
Grace Busch	(Alt)	No
John Johnson		Yes
Bob Westfall	(Alt)	Yes
John P. Kelley		Yes
John J. Kelley		Yes
John Kerr		No
Rudolf Kirschner		Yes
Tim Harrington	(Alt)	Yes
Clyde Kurtz		No
Robert Lang		Yes
Eugene Leibsohn		Yes
Philip Levy		Yes
Herb Winograd	(Alt)	Yes
Eli Krigsten	(Alt)	Yes
Charles Meinstein		Yes
Alfred Miller		No
Standly Milstein		Yes
Ted Mobley		No
Patrick Moraca		Yes
Herbert Munhall		Yes

William Ragsdale	(Alt)	No
Arthur R. Nelson		No
Laurance Nilsen		Yes
William Semmens	(Alt)	Yes
George Nickas		Yes
Richard Pennington		Yes
Philip Saba		Yes
Ronald Sandler		Yes
George Schade		No
Cliff Goodman	(Alt)	No
Bob Hagan	(Alt)	No
Herb Simmonson	(Alt)	Yes
Ronald Suiter		Yes
Donald Urrea		No
Neil Ward		Yes
Max Wertz		No
Jerry Wetherall		Yes
Jack Wilson		Yes
Alan Yudell		No
Richard Zonis		Yes
John Jarvis		Yes
James Austin	(Alt)	Yes
Robert Cloar	(Alt)	Yes
Kent Durfee	(Alt)	Yes
Jack Cook	(Alt)	No
Fred Jensen	(Alt)	Yes

PIMA COUNTY: Thirty delegate votes

James Beach, Jr.		No
Boyd Burkhardt		No
William D. Carrell		Yes
C.D. Christian		Absent
George D. Comerci		Absent
Stephen Cox		No
Richard Dahlen		No
Richard Dale		No
George Drach		Yes
Raymundo Esquivel		No
Morris H. Fine		Yes
Samuel Grabb		No
Lawrence Haas		Yes
Robert Hastings		No
George Kerrihard		Yes
Gary L.Henderson		No
Robert S. Hirsch		Yes
Arnold Hollander		Yes
John Magee		Yes
Christopher T. Maloney		Yes
Nick Mansour		No
Neopito L. Robles		No
Robert S. Taylor		Yes
Harold C. Tretbar		No
James Van Antwerp		Yes
Edmundo Felix	(Alt)	No
Robert Gearhardt	(Alt)	No
Lee Shultz	(Alt)	No
John Wagner	(Alt)	Yes
Maurice Zee	(Alt)	Yes

HOUSESTAFF: Two delegate votes

Donald J. Elgin	Yes
Victor J. Zannis	No

AMERICAN MEDICAL STUDENT ASSOCIATION: Two delegate votes

Kathy Kolt	Yes
Gae Rodke	Yes

BOARD OF DIRECTORS: Twenty-six delegate votes

Richard S. Armstrong, Pima	No
Marshall Block, Maricopa	Absent
W. Scott Chisholm, Maricopa	No
Daniel T. Cloud, Maricopa	No
John T. Clymer, Pima	No
William E. Crisp, Maricopa	No
Bruce N. Curtis, Graham	Absent
Edward R. Curtis, Graham	Absent
Richard L. Dexter, Pima	No
Arthur V. Dudley, Pima	No
James M. Hurley, Maricopa	No
John Kahle, Coconino	No
Jack M. Layton, Pima	No
Derrill Manley, Maricopa	Yes
James F. Martin, Yuma	Absent
Jack I. Mowrey, Navajo	Absent
William R. Meyers, Maricopa	No
Wilfred M. Potter, Maricopa	No
Robert A. Price, Maricopa	Absent
Wallace A. Reed, Maricopa	No
Albert Rosenblatt, Mohave	No
Edward Sattenspiel, Maricopa	No
William C. Scott, Pima	Yes
Lawrence J. Shapiro	Absent
Joseph P. Whaley, Pima	No
Reginald Zeluff, Maricopa	No

That concludes the vote.

Scientific Exhibits

The 1978 Scientific Exhibits were composed of many noteworthy displays. The Outstanding Scientific Exhibit Award was received by John M. Johnson, M.D. and Kathy LeMay for the display **Non-Invasive Testing of the Peripheral Vascular System.**

The other displays were:

Disability Evaluation Under Social Security
Vernon Kores, M.D.

Home Health Services in Arizona
Arizona Association of Home Health Agencies

Exercise and Preventive Cardiology
Howard J. Reuben, M.D.
Mary Ann Kotick, R.N.
Michael Smith, B.S.

Clinical Experience with Hoffmann External Fixation Device
Joseph J. Williams, M.D.
Loch Trimmingham, M.D.
Herbert J. Louis, M.D.

Pediatric Hypertension Clinic and Outreach Program
Audrey Rath, R.N.M.S.
Philip D. Walson, M.D.
Elmer S. Lightner, M.D.

Rotational Subluxation of the Carpal Navicular and Intercillary Instability of the Wrist: A Frequently Missed Roentgen Diagnosis
John C. Bjelland, M.D.
Michael J. Pitt, M.D.

Acute Bowing Fractures of the Extremities: A Frequently Missed Roentgen Diagnosis
John C. Bjelland, M.D.
Michael J. Pitts, M.D.

Automobile Safety for the Infant and Child
Arizona Chapter, American Academy of Pediatrics

Replantation and Microsurgery
Roland B. Joseph, M.D.
Leonard W. Bodell, M.D.

The ''Battered Child'' Syndrome
Alex Newman, M.D.
Denise M. Mulvihill, M.D.

ArMA Reports

THE MINUTES APPEARING IN THIS SECTION HAVE BEEN EDITED TO CONSERVE SPACE. A COMPLETE COPY OF THE MINUTES OF ANY MEETING WILL BE MAILED TO ANY MEMBER REQUESTING THEM.

BOARD OF DIRECTORS

The meeting of the Board of Directors of the Arizona Medical Association, Inc., held in Ballroom Salon #3 of the Marriott Hotel in Tucson, Arizona on Tuesday, April 25, 1978, a quorum being present, convened at 9:03 a.m., John F. Kahle, M.D., President and Chairman, presiding.

AUXILIARY REPORT

Mrs. Joseph Reno, outgoing president of the auxiliary, reported briefly on her year's activities and some of the plans for the coming year under the leadership of Mrs. James L. Parsons.

ArMPAC REPORT

Dr. Austin, Chairman of ArMPAC, reported that they are making good progress with a membership of 350. He also reported that Governor Bruce E. Babbitt will be the guest speaker at the ArMPAC Banquet on Thursday evening, April 27, 1978, and all members of the Board are urged to attend.

BOARD OF DIRECTORS

Joseph F. Boyle, M.D.

Dr. Boyle, Trustee of the American Medical Association, spoke briefly on the unified membership concept as well as other major problems facing organized medicine nationwide. He will make a major speech to the House of Delegates this afternoon.

1978-79 Meeting Schedule

IT WAS MOVED AND CARRIED TO ADOPT THE FOLLOWING SCHEDULE FOR THE COMING YEAR:

JULY 15, 1978 - SATURDAY - 10 A.M.
SEPTEMBER 16, 1978 - SATURDAY - 10 A.M.
DECEMBER 16, 1978 - SATURDAY - 10 A.M.
FEBRUARY 10, 1979 - SATURDAY - 10 A.M.
APRIL 25, 1979 - WEDNESDAY - 8 A.M. - ANNUAL MEETING
APRIL 29, 1979 - SUNDAY - 12 NOON - ANNUAL MEETING

BOMEX Lease

IT WAS MOVED AND CARRIED TO APPROVE THE LEASE WITH BOMEX FOR THE PERIOD 8/1/78-7/30/79 AT $6 PER SQUARE FOOT WITH A PROVISION THAT RENT BE INCREASED TO $6.50 PER SQUARE FOOT FOR THE FOLLOWING LEASE YEAR OF 8/1/79-7/30/80.

BOMEX Appointments

It was reported that M. David Ben-Asher, M.D. had been appointed to BOMEX to fill the vacancy created by the expiration of Guy B. Atonna, M.D.'s term. No word has been received regarding our recommendation that Albert Eckstein, M.D. be reappointed.

EXECUTIVE COMMITTEE

Membership Classification Changes Approved

(1) Maricopa County Medical Society
- **(a) Carl H. Ault, M.D. - Active to Associate - Account Retired - Effective 1/1/78 - Dues Exempt**
- **(b) John F. Moon, M.D. - Active Over 70 to Associate - Account Retired - Effective 1/1/78 - Dues Exempt**
- **(c) William J. Moore, M.D. - Active to Associate - Account Retired - Effective 1/1/78 - Dues Exempt**

(2) Pima County Medical Society
- **(a) Max Costin, M.D. - Active to Associate - Account Retired - Effective 1/1/78 - Dues Exempt**
- **(b) Philip S. Greenbaum, M.D. - Active to Associate - Account Retired - Effective 1/1/78 - Dues Exempt**
- **(c) Clarence J. Hindman, M.D. - Active to Associate - Account Residency - Effective 1/1/78 - Dues Exempt**
- **(d) Henry J. Kurtin, M.D. - Active to Associate - Account Retired - Effective 1/1/78 - Dues Exempt**
- **(e) Otis B. Miller, M.D. - Active to Associate - Account Retired - Effective 1/1/78 - Dues Exempt**
- **(f) J.R. Schwartzman, M.D. - Active to Associate - Account Retired - Effective 1/1/78 - Dues Exempt**
- **(g) Stuart W. Westfall, M.D. - Active to Associate - Account Retired - Effective 1/1/78 - Dues Exempt**

(3) Santa Cruz County Medical Society
- **(a) Gary M. Pickrell, M.D. - Active to Associate -Account Residency - Effective 1/1/78 - Dues Exempt**

FINANCE COMMITTEE

Dr. Clymer reviewed the financial statement for the period ending March 31, 1978 - RECEIVED

MATERNAL & CHILD HEALTH CARE COMMITTEE

ASU Associated Students Request

The subject organization's request for support of more gynecological services at student health centers was discussed at some length.

IT WAS MOVED AND CARRIED TO SUPPORT THE ASSOCIATED STUDENTS OF ASU IN THEIR EFFORT TO GET THE BOARD OF REGENTS TO MODIFY THEIR POLICY ON BIRTH CONTROL BY PLACING PRIMARY EMPHASIS ON THE PROVISION OF PRESCRIPTIONS FOR BIRTH CONTROL INSTEAD OF ON BIRTH CONTROL DEVICES.

AMA DELEGATION

Arthur V. Dudley, M.D.'s report of the special regional meeting of Delegates was reviewed as follows:

> "It was pointed out that the AMA financed and paid for the Flexnor Report of 1911, the Millis Report in 1950 and most recently, the report of the National Commission on the Cost of Medical Care. While the latter report is only in its infancy it was felt that these three reports are the three most important endeavors that the AMA has ever financed.
>
> As an indication of how we are being more and more regulated by government it was shown that in 1960 there were only four governmental regulatory agencies, in 1978 there are now a total of seventy-seven.
>
> Voluntary cost containment reports were given by each of the eleven States present at this meeting. On the whole, most of the States were just getting underway on this effort.
>
> The gross national product is increasing at a present rate of 11%. The hospital increase was 18% in 1976 and 16.8% in 1977 in an attempt to reduce by 2% per year the cost of total medical care to reach the same growth as the GNP by 1980-81. This is a voluntary effort to prevent a mandatory cap on increase of hospital expenses of 9% as presently proposed in the House of Representatives.
>
> That JCAH has been a shared enterprise since 1951. The two aspects that they inspect are the life safety code and the quality of care. Some 4,000 surveys are made each year and 59% of those surveys get 2 year accreditation, 40% 1 year accreditation, and 1% fail completely. Of the one year accreditation 40% fail on life safety code, 20% on the quality of care — the medical audit, and 40% fail across the board.
>
> Membership was a big topic and most of the Western states experienced some loss of membership. A common comment by other members and non-members is "what has the AMA done for me." It was pointed out that 98% of the dues dollars promote the Art and Science of Medicine. This can be shown by the quality of our medical schools (Flexnor Report), the quality of our post-graduate education (the Millis Report), and now with the early investigation of the cost of medical care."

CORRESPONDENCE

Subpoena for Medical Records

Mr. Kenneth Rosengren's attorney at law, letter of February 28, 1978 on the subject matter along with two letters from the Maricopa Bar Association and one from the Maricopa County Medical Society all on the same subject were reviewed - RECEIVED FOR INFORMATION.

Arizona Chapter - American Medical Students Association

The letter of April 1, 1978 from the subject organization expressing appreciation for our support was received.

OTHER BUSINESS

Request for funding

Mr. Doug Outcalt's request for funding to tour health facilities in Cuba was discussed with no action taken.

AD HOC COMMITTEE ON HEALTH CARE COST

Dr. Robert Hastings reviewed his committee's report for the Board. Discussion ensued. Several changes were made.

IT WAS MOVED AND CARRIED TO ADOPT THE REPORT AS AMENDED, AND READS AS FOLLOWS, SUBJECT TO REVIEW BY LEGAL COUNSEL.

"Health care expenditures comprise an increasing portion of the gross State and National Product. The causes of this are multiple, however, a major factor in the increasing costs is continued sophistication of care including expensive diagnostic and therapeutic techniques that were not available as recently as 10-20 years ago. These include recovery rooms and their telemetry, intensive care units, coronary care units, increasingly complex radio-isotope scanning technology, CAT scanning, sophisticated laboratory technology with marked increases in the numbers and types of tests, renal dialysis units, and expansion of open heart surgery with the more recent development of cardiac coronary artery by-pass surgery, to mention only a few. In this regard, an increasing percent of the population is now involved in health related industries which also has a favorable impact on the economy. With all of the discussion about Federal control of health care, there are three points to be made about all other countries who have adopted Federal programs of health care and these are:

1. Uniform increasing cost
2. Uniform decline in the availability of care
3. Uniform decline in the overall quality of care

In the absence of a Medicaid program in Arizona, we have a unique opportunity to adopt a significant state program for health care which could serve as a model for other states, provided this is associated with some federal deregulation in order to lower the administrative costs of regulatory programs. The Ad Hoc Committee on Health Care Cost of the Arizona Medical Association has addressed this issue and this is our report.

1. We recommend that all suggestions of cost control must have as the bottom line - quality. The citizens of Arizona should be informed and educated about the cost of quality care.
2. We recommend that hospitals provide a summary of charges on each patient upon discharge and affix it to the hospital chart for review by the attending physician. A resolution is being introduced at the next annual meeting in order to assist in adoption of this program throughout the State of Arizona. Additionally, we recommend that hospitals make available to their medical staffs copies of lists of rates and charges for rooms and common tests and procedures.
3. We recommend health insurance incentives in order to put the average consumer back in the marketplace by assuming a financial responsibility in his own health care costs. These could include:
    (a) A reasonable deductible on *all* health insurance policies for *total* health care cost (total health care cost includes well care and preventive medicine) as well as sick care.
    (b) All health insurance policies should have a co-payment after a reasonable deductible for total health care cost, probably based on sliding scale and related to ability to pay. (An example would be 20% of the first $2,000 and 10% of the next $5,000). As an alternative, health insurance should have a deductible, followed by payment of all cost up to a certain amount, then followed by co-payment.
    (c) Review of all disability insurance programs, including the Industrial Commission of Arizona, and their relation to health care cost.
    (d) Review of incentive programs for not utilizing health care insurance now in use by insurance companies (such as Mutual of Omaha, White Cross, and Christian Heritage) to see if they offer any benefit in reduction of health care costs or are only used as a sales incentive.
    (e) Review of a mechanism for measuring the quality of care (physician performance) with incentives for practice above the normal and restraints for practicing below the norm.
4. We recommend development of a health education program for consumers. The ArMA Professional Committee should develop such a program to begin in the elementary school system with the aid and assistance of the Department of Education and the Department of Health Services with emphasis on individual responsibility for health.
5. We recommend that a task force be developed by ArMA to educate the citizens and physicians of Arizona on how not to use high cost hospital emergency room services.
6. We recommend that any major effort to contain cost of medical care must address and correct the proliferating cost associated with implementation of expanding federal regulations (in other words, must include deregulation). This includes costs found at all levels of the bureaucracy, including Medicare and Medicaid administration.
7. We recommend a voluntary review process for medical equipment for doctors' offices in regards to specific, named, high cost equipment since setting a specific dollar value for review is likely to be counter productive in terms of cost containment.
8. We recommend incentives for both the patient and physician to use ambulatory care facilities.
9. We recommend a compehensive catastrophic health insurance program for all residents of the State of Arizona. This would be a new and increased cost, but it would significantly reduce county hospital and university hospital losses and also losses in revenue to private hospitals which are now passed on to all paying patients, at the same time as it would improve both the medical and financial health of those involved.
10. All teaching hospitals should be responsible to educate their interns and residents about the cost of medical service, which would include a review of the hospital bills by attending physicians and housestaff.
11. We recommend that hospital governing boards, administrators, and medical staffs consult on a regular basis about rates and charges and mutually cooperate to lower costs.

Additional cost containment alternatives which must be seriously considered include:

1. Refunds to individuals of families of a portion of health insurance premiums if utilization is below certain pre-determined standards.
2. Lowered health insurance premiums for those whose personal health habits make them lower risks for diseases or injuries. (Non-smokers, non-drinkers, non-obese, etc.)
3. Use of the appropriate level of care and insurance payments to correspond to the appropriate level (least costly quality care).
4. Medical necessity review.
5. State-wide health planning with adequate expert input from all health providers, as opposed to regulation.
6. Identify and prosecute cases of consumer and provider fraud and abuse.
7. Including all Federal, State and County hospitals in health care planning and regulation to prevent duplication of services and make health care planning more equitable and meaningful for all citizens of the State of Arizona.
8. Identification and publicizing of healthful lifestyles.
9. Encouragement of physicians to avoid involvement in business ventures which represent a conflict of interest to their professional activities.

Though it might be possible to add many other areas for potential cost containment, these outlined, if implemented, would offer a significant impact on the cost of health care at all levels and in all settings in the State of Arizona."

Santa Cruz County Medical Society

Frederic L. Ruskin, M.D., president of the Santa Cruz County Medical Society, reviewed the subject of the Director of the County Health Department and the need for this position to be held by a doctor of medicine.

IT WAS MOVED AND CARRIED TO INTRODUCE THE FOLLOWING RESOLUTION INTO THE HOUSE OF DELEGATES:

WHEREAS, It appears that the Director of the Health Department of Santa Cruz County, Arizona, is not a medical doctor licensed to practice medicine in the State of Arizona, or a practicing physician within the County of Santa Cruz; and

WHEREAS, Sound health and medical practice dictate the need for professionally educated, qualified and licensed medical personnel to direct the operations of local health services; and

WHEREAS, The need for professionally qualified medical doctors in such positions is recognized by our state legislature in consistently providing that city and county health officers be practicing physicians and licensed physicians; and

WHEREAS, There are several licensed medical doctors practicing medicine in the County of Santa Cruz, Arizona, at the present time, and it appears that one or more of such practicing physicians are available to fill the post of Director of Health Department of Santa Cruz County; now therefore, be it

RESOLVED, That the Arizona Medical Association join the Santa Cruz Medical Society in recommending to the Board of Health and the County Supervisors of Santa Cruz County that it retain, as Director of the Health Department, a qualified licensed doctor who is a practicing physician in Santa Cruz County.

Membership

Dr. Manley and Dr. Wertz reviewed in great depth the pros and cons of unified membership presenting many statistics and charts regarding Association membership from 1960 to the present - no action was taken.

Building Assessment

The subject of eliminating the building fund assessment for new members was reviewed by Dr. Hastings - no action.

EXECUTIVE COMMITTEE

The meeting of the Executive Committee of the Arizona Medical Association, Inc., held in the Sonora Room of the Marriott Hotel, Tucson, Arizona, on Tuesday, April 25, 1978, a quorum being present, convened at 7:09 a.m., John F. Kahle, M.D., President and Chairman, presiding.

DEPARTMENT OF HEALTH SERVICES

Dr. Dandoy reported on the Arizona State Hospital indicating that a new director, George D. Kenner, M.D., had been engaged and would be taking over the direction soon. She also reported that HEW's Influenza Program had been delayed until the legal liability problems with the program had been resolved.

ATTORNEY GENERAL DEMANDS

As requested, Mr. Robinson reported that as of March 24, 1978, 74½ hours of his time had been spent in responding to the subject "Demands" with 2,188 copies of documents made. He also reported that the project was only half over. The amount of legal fees involved has not been determined yet.

WARD B. STUDT, M.D.

Mr. Robinson reported on the current status of the effort to obtain a refund from Dr. Studt, reporting that we had received correspondence from the U.S. Civil Service Commission which stated in part:

> "Our review of the assignment agreement (Optional Form 69, dated February 18, 1977) reveals no mention of bonus pay in addition to Dr. Studt's basic salary of $42,693 per annum as an obligation under the agreement (Part VI - EMPLOYEE BENEFITS). There is also no mention of the assignee's entitlement to travel and transportation expenses, nor is there any indication as to whether the Federal agency or the university will pay such expenses." - RECEIVED.

FUTURE MEETINGS

It was agreed that the Executive Committee would meet on the third Friday of each month except in months when the Board of Directors meets, then the committee would meet on the night before the Board meeting. Such meetings would be subject to the call of the president.

IRS AUDIT

Mr. Robinson reported on the status of the IRS Audit indicating that it was not complete yet and that to date, 75 hours of his time had been spent, 2 hours of our attorney's time, 6 hours of our auditor's time, and 12 hours of our accountant's time had been spent. We are waiting for a response from the IRS auditor.

UNDERWRITING REVIEW COMMITTEE

Mr. Robinson reviewed the Snell & Wilmer letter of April 11, 1978 regarding the activities of the subject committee - RECEIVED.

SPECIALTY SOCIETY SERVICE

Mr. Robinson reported that the Medical Specialty Society Services program is growing, and we have received numerous recent requests to expand this service. We are at the stage where we are going to have to add an additional clerical person to meet the demands. He pointed out that this service is paid for by the societies and does not come from ArMA membership dues - APPROVED.

BOARD OF DIRECTORS AGENDA

The committee reviewed the agenda for the Board of Directors meeting scheduled for later in the day and made several changes and additions.

PHYSICIAN REHABILITATION COMMITTEE

The meeting of the Physician Rehabilitation Committee of the Arizona Medical Association, Inc., held in the Sonora Room of the Marriott Hotel, Tucson, Arizona, on April 26, 1978, convened at 7:06 p.m., Thomas E. Bittker, M.D., Chairman, presiding.

NATIONAL SCENE

Emanuel M. Steindler, Director, Department of Mental Health, American Medical Association, reviewed the history and development of committees dealing with the impaired or sick physician nationwide. He reviewed the various approaches taken by different groups as well as problems faced by specific states and committees. Extensive discussion ensued on our committee's activities and how we can improve upon its activities.

GROUP CONTACTS

It was agreed that contacts should be made with various medical organizations, and the following assignments were agreed upon:

Thomas E. Bittker, M.D.: Phoenix Psychiatric Council

Harrison G. Butler, M.D.: Desert Samaritan Hospital, Mesa Lutheran Hospital

Everett W. Czerny, M.D.: Arizona Chapter, American College of Surgeons, Tucson Surgical Society, St. Mary's Hospital

B. Ross Landess, M.D.: Doctors Hospital, St. Joseph's Hospital in Phoenix, Arizona Academy of Family Physicians

Laurence M. Linkner, M.D.: Maricopa Pediatric Society, Arizona Chapter, American College of Surgeons, Arizona Childrens Hospital

Bruce E. Robinson: Arizona Hospital Association

Stephen C. Scheiber, M.D.: Arizona Medical Center, Keno Hospital, VA Hospital in Tucson, Tucson Psychiatric Council

Walter B. Tomlinson, M.D.: Cochise County Medical Society

Louis E. Young, M.D.: St. Joseph's Hospital in Tucson, Pima Alcohol Consortium

It was determined to ask each of the above to provide a progress report as they meet with the above groups.

NEXT MEETING

It was agreed that the next meeting of the committee would be held at 12 Noon on Saturday, September 9, 1978 at the Association offices.

BOARD OF DIRECTORS

The meeting of the Board of Directors of the Arizona Medical Association, Inc., held in the Sonora Room of the Marriott Hotel, Tucson, Arizona, on Saturday, April 29, 1978, a quorum being present, convened at 12:36 p.m., Richard L. Dexter, M.D., President and Chairman, presiding.

COMMITTEE CONFIRMATIONS

IT WAS MOVED AND CARRIED TO CONFIRM THE APPOINTMENTS TO THE FOLLOWING COMMITTEES:

NOTE: The single asterisk indicates reappointment. The double asterick indicates new appointments. Those without asterisks are previous year appointments whose terms are still in effect. They are listed here for information only.

ARTICLES OF INCORPORATION AND BYLAWS COMMITTEE TERM 1978-79

*C.E. Henderson, M.D., Chairman
*J.A. Ash, M.D., Secretary
*W.E. Crisp, M.D., President-Elect
*R.L. Dexter, M.D., President
*P.E. Dew, M.D.
*P.B. Jarrett, M.D.
*W.D. Rummel, M.D.
*E. Sattenspiel, M.D.
*W.C. Scott, M.D.
*N.O. Ward, M.D.
*W.F. Worthen, M.D.
*C.E. Yount, M.D.

BENEVOLENT AND LOAN FUND COMMITTEE

	TERM
*A.V. Dudley, M.D., Chairman	1978-79
	1976-79
*J.A. Ash, M.D., Secretary	1978-79
*W.E. Crisp, M.D., President Elect	1978-79
D.C. DeBoer, M.D.	1976-79
*R.L. Dexter, M.D., President	1978-79
R.L. Foster, M.D.	1977-80
A.M. Goldner, Ph.D.	1976-79
**P.N. Levin, M.D.	1978-81
**G.S. Naifeh, Jr., M.D.	1978-81
*N.L. Robles, M.D., Treas. Specified	1978-79
C.C. Vaughn, Jr., M.D.	1976-79
K.E. Voldeng, M.D.	1976-79

FINANCE COMMITTEE

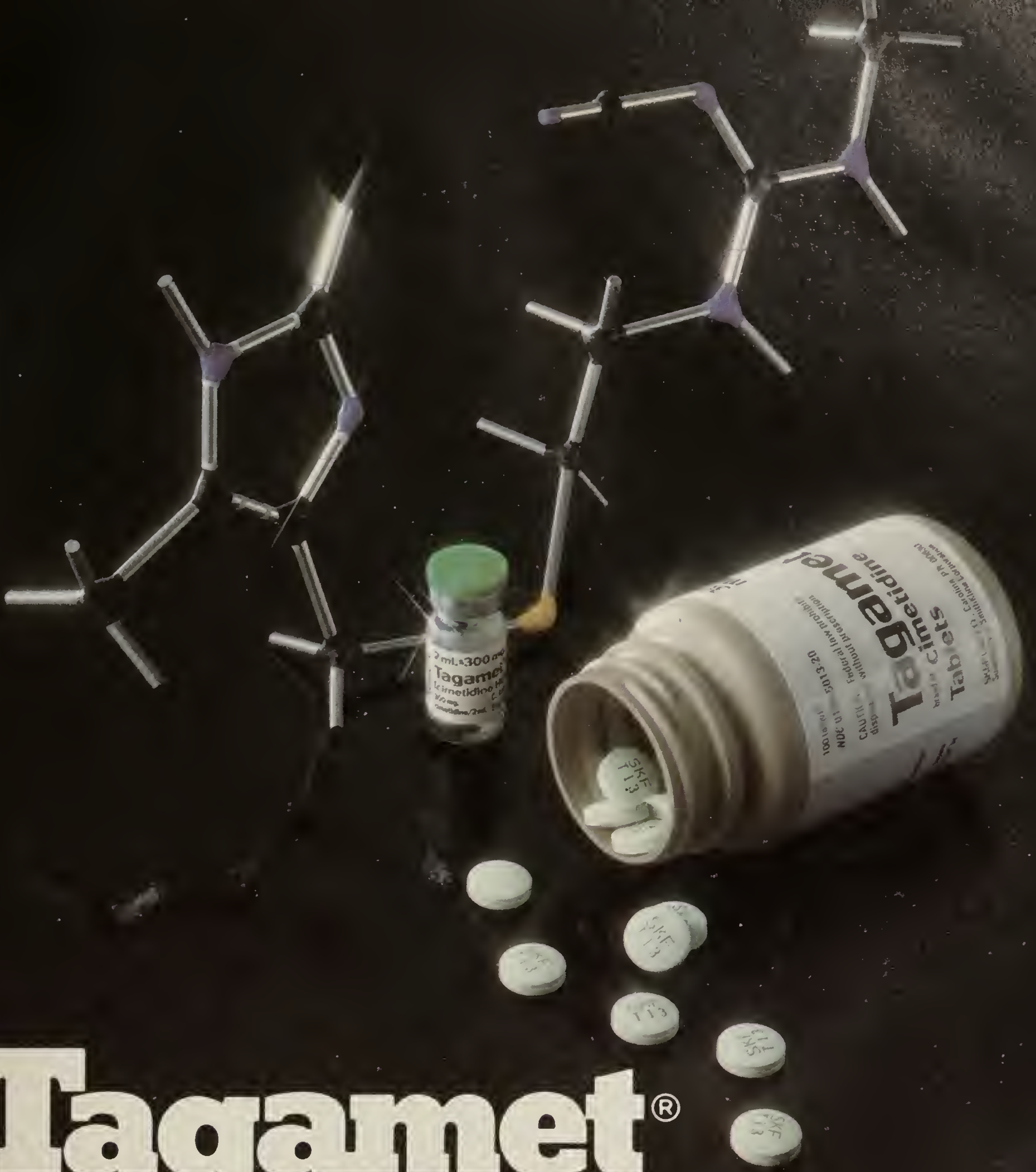
	TERM
N.L. Robles, M.D., Chairman	1978-79
*J.A. Ash, M.D., Secretary	1978-79
R.F. Crawford, M.D.	1976-79
*W.E. Crisp, M.D., President-Elect	1978-79
*R.L. Dexter, M.D., President	1978-79
*H.G. Erhart, Jr., M.D.	1978-81
M. Goldsmith, M.D.	1977-80
**J.L. Grobe, M.D.	1978-81
J.W. Haggard, M.D.	1977-80
J.W. Kennedy, M.D.	1977-80
C.T. Maloney, M.D.	1977-80
T.L. Mobley, M.D.	1976-79
S.I. Shapiro, M.D.	1977-80
**H.C. Tretbar, M.D.	1978-81

GOVERNMENTAL SERVICES COMMITTEE

	TERM
**L.C. Kossuth, M.D., Chairman	1978-79
	1977-80
J.A. Ash, M.D.	1976-79
*W.E. Crisp, M.D., President-Elect	1978-79
*R.L. Dexter, M.D., President	1978-79
L.S. Epstein, M.D.	1976-79
*C. Kalil, M.D.	1978-81
**E.J. Lefeber, Jr., M.D.	1978-81
D.W. Melick, M.D.	1976-79
W.A. Reed, M.D.	1976-79
A.I. Rosenblatt, M.D.	1977-80
M.C. Schneider, M.D.	1977-80
C.A. Trahern, M.D.	1977-80
**H.E. Wuesthoff, M.D.	1978-81
**L.D. Zeitzer, M.D.	1978-81

GRIEVANCE COMMITTEE

	TERM
J.F. Kahle, M.D., Chairman	1978-79
R.W. Abbuhl, M.D.	1976-79
J.A. Ash, M.D., Secretary	1978-79



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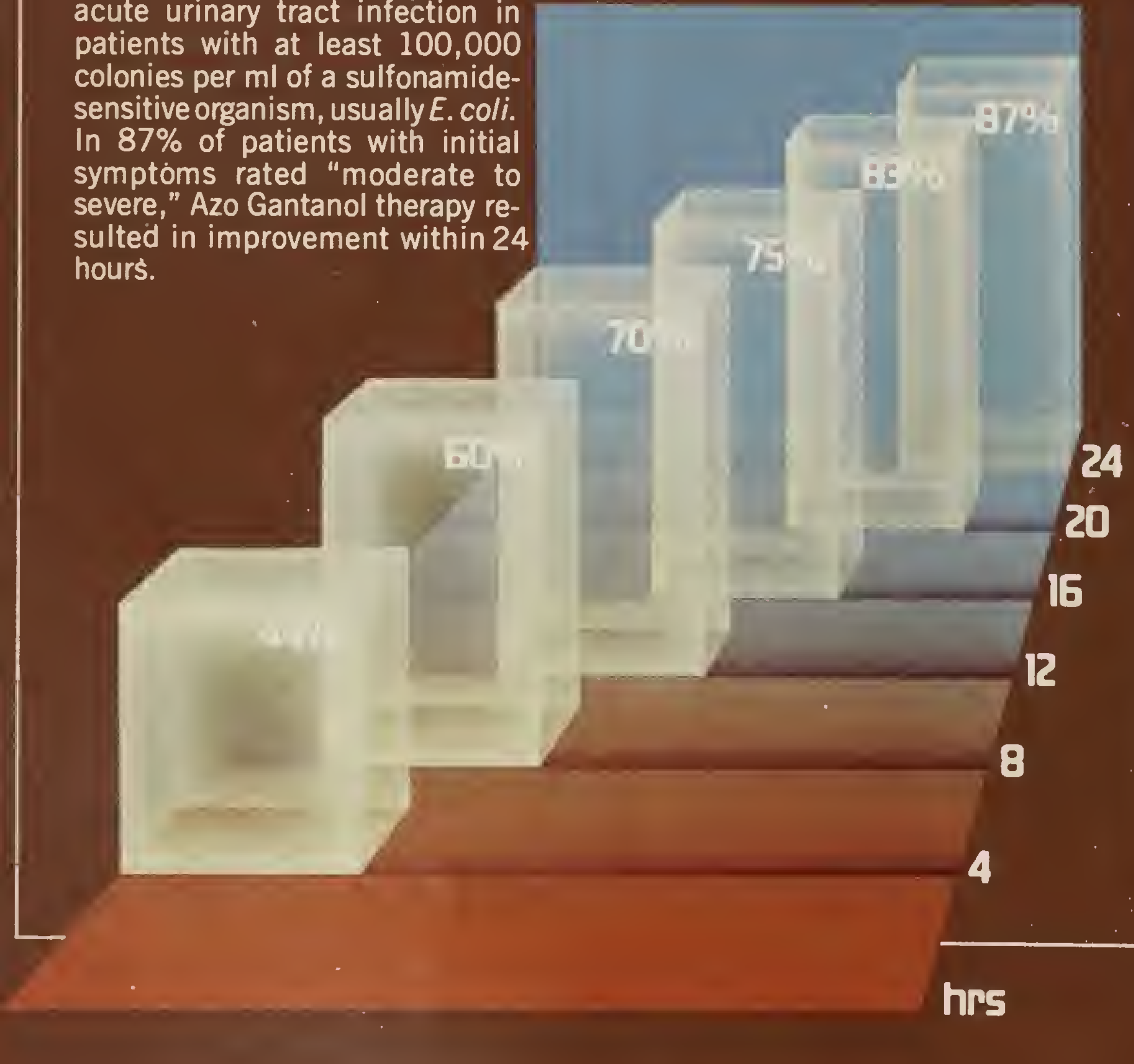
In 87% of patients studied [303 of 349], Azo Gantanol® reduced pain and/or burning within 24 hours*

A controlled, multicenter study assessed the efficacy of Azo Gantanol in relieving pain and/or burning associated with acute urinary tract infection in patients with at least 100,000 colonies per ml of a sulfonamide-sensitive organism, usually *E. coli.* In 87% of patients with initial symptoms rated "moderate to severe," Azo Gantanol therapy resulted in improvement within 24 hours.



Fast pain relief plus effective antibacterial action

Azo Gantanol®

Each tablet contains 0.5 Gm sulfamethoxazole and 100 mg phenazopyridine HCl.

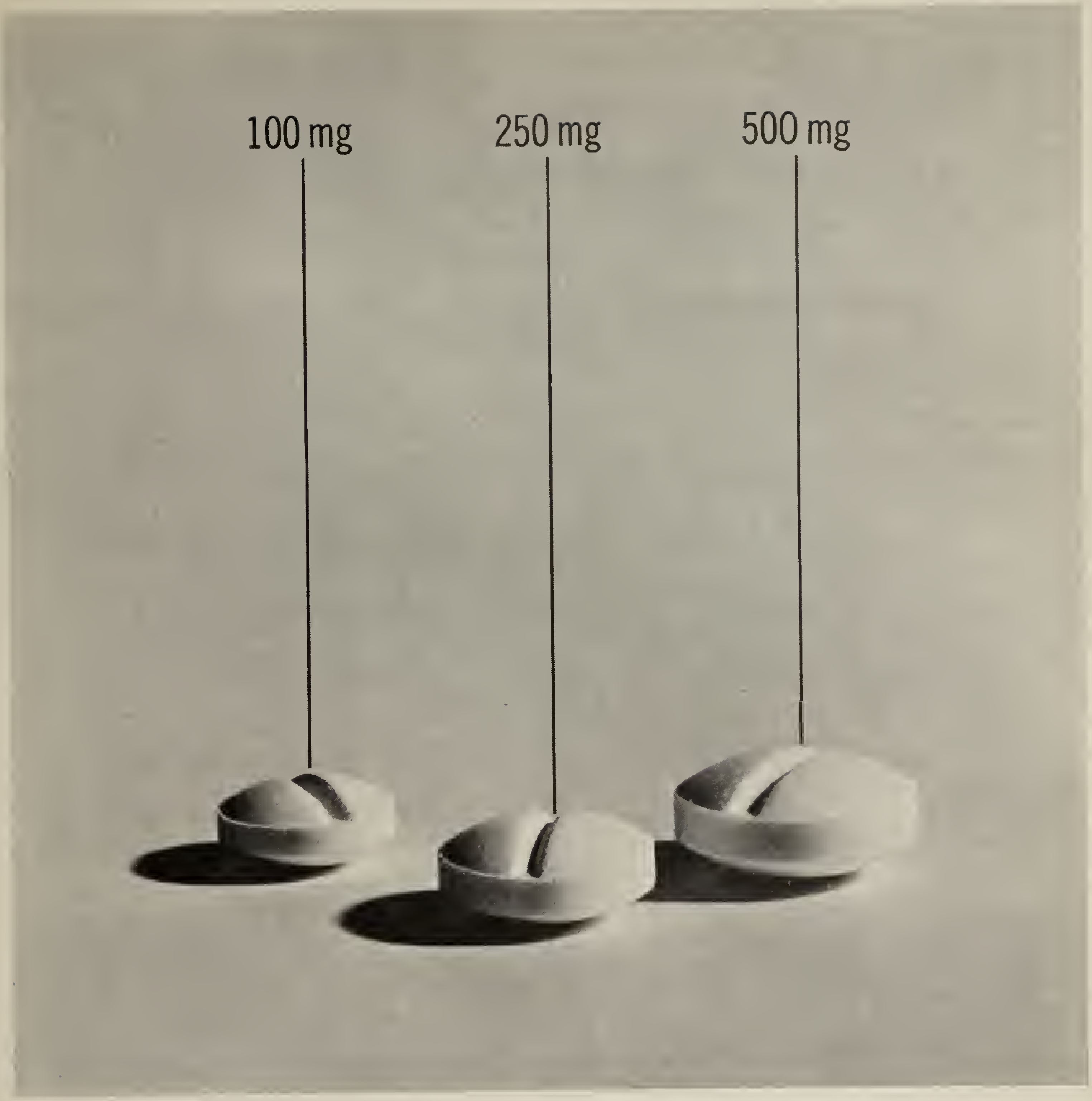
for the pain **for the pathogens**

*Data on file, Hoffmann-La Roche Inc., Nutley, New Jersey 07110.

Before prescribing, please consult complete
uct information, a summary of which follows:
Indications: In adults, urinary tract infections
complicated by pain (primarily pyelonephritis,
pyelitis and cystitis) due to susceptible organi
(usually *E. coli, Klebsiella-Aerobacter, Staphyl*
coccus aureus, Proteus mirabilis, and, less fre-
quently, *Proteus vulgaris*) in the absence of
obstructive uropathy or foreign bodies. **Note:**
fully coordinate ***in vitro*** **sulfonamide sensitivity**
tests with bacteriologic and clinical response;
aminobenzoic acid to follow-up culture media.
increasing frequency of resistant organisms lim
the usefulness of antibacterials including sul-
fonamides. Measure sulfonamide blood levels
variations may occur; 20 mg/100 ml should be
maximum total level.
Contraindications: Children below age 12; sul-
fonamide hypersensitivity; pregnancy at term
during nursing period; because Azo Gantanol
tains phenazopyridine hydrochloride it is contr
dicated in glomerulonephritis, severe hepatitis,
uremia, and pyelonephritis of pregnancy with
disturbances.
Warnings: Safety during pregnancy not establi
Deaths from hypersensitivity reactions, agranu
tosis, aplastic anemia and other blood dyscras
have been reported and early clinical signs (
throat, fever, pallor, purpura or jaundice) may i
dicate serious blood disorders. Frequent CBC a
urinalysis with microscopic examination are r
ommended during sulfonamide therapy.
Precautions: Use cautiously in patients with i
paired renal or hepatic function, severe allergy
bronchial asthma; in glucose-6-phosphate
dehydrogenase-deficient individuals in whom
dose-related hemolysis may occur. Maintain
adequate fluid intake to prevent crystalluria a
stone formation.
Adverse Reactions: *Blood dyscrasias* (agran-
ulocytosis, aplastic anemia, thrombocytopenia,
leukopenia, hemolytic anemia, purpura, hypo
thrombinemia and methemoglobinemia); *allerg*
reactions (erythema multiforme, skin eruption
Stevens-Johnson syndrome, epidermal necroly
urticaria, serum sickness, pruritus, exfoliative
dermatitis, anaphylactoid reactions, periorbital
edema, conjunctival and scleral injection, phot
sensitization, arthralgia and allergic myocarditi
G.I. reactions (nausea, emesis, abdominal pai
hepatitis, diarrhea, anorexia, pancreatitis and
stomatitis); *CNS reactions* (headache, periphe
neuritis, mental depression, convulsions, ataxia
hallucinations, tinnitus, vertigo and insomnia);
miscellaneous reactions (drug fever, chills, tox
nephrosis with oliguria and anuria, periarteritis
nodosa and L. E. phenomenon). Due to certain
chemical similarities with some goitrogens, di-
uretics (acetazolamide, thiazides) and oral hy
glycemic agents, sulfonamides have caused ra
instances of goiter production, diuresis and hy
glycemia. Cross-sensitivity with these agents
exist.
Dosage: Azo Gantanol is intended for the acute
painful phase of urinary tract infections. *Usual*
adult dosage: 2 Gm (4 tabs) initially, then 1 G
(2 tabs) B.I.D. for up to 3 days. If pain persists
causes other than infection should be sought.
After relief of pain has been obtained, continu
treatment with Gantanol (sulfamethoxazole) ma
be considered.
NOTE: Patients should be told that the orange-
dye (phenazopyridine HCl) will color the urine.
Supplied: Tablets, red, film-coated, each conta
ing 0.5 Gm sulfamethoxazole and 100 mg
phenazopyridine HCl—bottles of 100 and 500.

ROCHE

Roche Laboratories
Division of Hoffmann-La Roche
Nutley, New Jersey 07110



Tolinase®
tolazamide, Upjohn

Please contact your Upjohn representative for additional product information.

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J-5695-6
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EMPIRIN® COMPOUND
c̄ CODEINE

Each tablet contains: aspirin, 227 mg; phenacetin, 162 mg; and caffeine, 32 mg; plus codeine phosphate in one of the following strengths: #4—60 mg (gr 1); #3—30 mg (gr ½); #2—15 mg (gr ¼); and #1—7.5 mg (gr ⅛). (Warning—may be habit-forming).

CIII

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North Carolina 27709

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Future Medical Meetings

CONTINUING MEDICAL EDUCATION

The following institutions and organizations have been accredited for their continuing medical education programs by the Liaison Committee on Continuing Medical Education.

Arizona Heart Institute
Arizona Medical Association, Inc.
Arizona State Hospital, Phoenix
Desert Samaritan Hospital, Mesa
Good Samaritan Hospital, Phoenix
Health Maintenance Associates
Phoenix Indian Medical Center
Phoenix Psychiatric Council
Maricopa County General Hospital, Phoenix
Memorial Hospital, Phoenix
St. Luke's Hospital & Medical Center, Phoenix
St. Joseph's Hospital & Medical Center, Phoenix
Tucson Hospitals Medical Education Program,
  Tucson
U of A College of Medicine
Veterans Administration Center, Prescott
Veterans Administration Hospital, Phoenix

The accredited institutions and organizations above produce a variety of continuing medical education programs. Each accredited institution and organization is responsible for designating which of these programs meet ArMA's requirements for Category 1 credit. Physicians who participate in programs which are designated Category 1 by accredited institutions will receive Category 1 credit toward the ArMA Certificate in CME and the AMA's Physician's Recognition Award.

Individual program listings below indicate Category of CME. Where not indicated, no credit has been approved. For further information on any programs, contact person named.

JULY

A Day of Surgery
July 28, 1978. Little America Hotel, Flagstaff, AZ. Sponsor: College of Medicine, AZ Chapter of American College of Surgeons. Contact: C.H. Fredell, M.D., 120 W. Fine St., Flagstaff, AZ 86001. Approved for 7 hours of category 1 credit.

Coconino County Medical Society 14th Summer Medical Seminar
July 29 & 30, 1978. Little America, Flagstaff, AZ. Sponsor: Coconino County Medical Society. Contact: Paul Lundstrom, M.D., 120 W. Fine, Flagstaff, AZ 86001. Approved for 8 hours of category 1 credit.

SEPTEMBER

Arizona Society for Respiratory Therapy
September 6, 7, 8, Tucson, Arizona. Contact: Steve Krug, Chairman, c/o Tucson General Hospital, 3838 N. Campbell Ave., Tucson, AZ 85719

38th Annual AMA Congress On Occupational Health
September 14-16, 1978, Tucson, AZ. Contact: Barbara S. Jansson, Dept. of Environmental, Public & Occupational Health, AMA, 535 N. Dearborn St., Chicago, IL 60610. Approved for 15 hours of category 1 credit.

NOVEMBER

Fourth Annual Pediatric & Adolescent Echocardiography Course
November 10-12, 1978. Las Vegas, Nevada. Sponsored by American Society of Echocardiography, American Institute of Ultrasound in Medicine & H.E.L.P. Contact: Pediatric Echocardiography Course, 4340 Placita Panuco, Tucson, AZ 85718. Approved for category 1 credit.

26th Annual Meeting of the Medical Society of the United States and Mexico
November 15-18, 1978. Guadalajara, Jalisco, Mexico. Contact: Mrs. Carolyn Parsons, Exec. Secy., 3161 N. Pantano Rd., Tucson, AZ 85715.

The Executive Physician Development Conference: Management in the Framework of Accounting & Finance
November 13-17, 1978. Arizona Inn, Tucson, AZ. Sponsor: U of A College of Medicine. Office of Continuing Medical Education and Outreach. Contact: Anthony F. Vuturo, M.D. Approved for 50 hours of category 1 credit.

DECEMBER

New Trends in Surgery: Arizona Chapter American College of Surgeons Annual Conference
December 1 & 2, 1978. Doubletree Inn, Scottsdale, AZ. Sponsor: Arizona Chapter of Surgeons. Contact: James J. Berens, M.D., 550 W. Thomas Rd., Phoenix, AZ 85013. Approved for 12 hours of category 1 credit.

1979

FEBRUARY

16th Annual Meeting of the Federation of Western Societies of Neurological Science, Inc.
February 22-25, 1979. Mountain Shadows, Scottsdale, AZ. Contact: Larry Stern, M.D., Program Chairperson, U of A Dept. of Neurology, Tucson, AZ 85721.

Pediatric Update 1979
February 26 - March 1, 1979. Scottsdale Sheraton Inn, Scottsdale, AZ. Sponsor: St. Joseph's Hospital & Medical Center, Phoenix, AZ. Contact: Tracy L. Trotter, M.D., Dept. of Pediatric Education, St. Joseph's Hospital & Medical Center, 350 West Thomas Rd., Phoenix, AZ 85013. Approved for 16 hours of category 1 credit.

MONTHLY OR WEEKLY

Headache Rounds
Tuesday afternoons or Thursday mornings weekly. Sponsor: Headache Group of the Southwest. Contact: Peggy Voigt, 2610 W. Bethany Home Rd., Phoenix, AZ 85017, or phone 242-6646.

Shrine Medics Meeting
Second Tuesday of each month, Doctors Hospital, 5:45 p.m., J. South Classroom. Sponsor: Shrine Medics. Contact: Robert C. Briggs, M.D., 5121 N. Central Ave., Phoenix, AZ 85012.

Office Psychiatry for the Primary Provider
2nd Monday of month, 4811 N. 7th Street, Phoenix, AZ. Sponsor: Arizona Health Plan. Contact: T.R. Bittker, M.D., Box 5000, Phoenix, AZ 85010. Approved for category 1 credit.

Counter Transference Group
Weekly, Thurs. 8-10 p.m. Sponsor: Phoenix Psychiatric Council. Contact: James E. Campbell, M.D., 5051 N. 34th St., Phoenix, AZ 85018. Approved for 2 hours category 1 credit.

Monthly Meeting of Tucson Radiologists
Last Tues. of month. Plaza International, Tucson, AZ. Sponsor: U of A Medical Center, Dept. of Radiology. Contact: Irwin M. Freundlich, M.D., Arizona Medical Center, Dept. of Radiology, Tucson AZ 85724. Approved for 2 hours category 1 credit.

Pediatric Grand Rounds
Tuesday 7:30-8:30 a.m. in Phoenix: 1st Tues.—Phoenix Indian Hospital, 2nd Tues.—Maricopa County Hospital, 3rd Tues.—Good Samaritan Hospital, 4th Tues.—St. Joseph's Hospital. Sponsor: Maricopa County Hospital (Phoenix Hospital's Affiliated Pediatric Program). Contact: J. Kipp Charlton, M.D., 2601 E. Roosevelt, Phoenix, AZ 85008. Approved for 1 hour per session category 1 credit.

Review of Forensic Pathology, Current Case, Special Topics
Thursday, weekly, 11 a.m., 120 S. 6th Ave., Phoenix, AZ. Sponsor: Arizona Society of Pathologists. Contact: H.H. Karnitschnig, M.D., 120 S. 6th Ave., Phoenix, AZ. Approved for 1 hour per session category 1 credit.

Staff Education Conference
Wednesdays, weekly, 1 p.m., Arizona State Hospital, Phoenix, AZ. Sponsor: Arizona State Hospital. Contact: Howard E. Wulsin, M.D., Arizona State Hospital, 2500 E. Van Buren, Phoenix, AZ 85008. Approved for 1 hour per session category 1 credit.

BARROW NEUROLOGICAL INSTITUTE

Medical Education
Barrow Neurological Institute of St. Joseph's Hospital and Medical Center, 350 W. Thomas Road, Phoenix, AZ 85013. Sponsor: St. Joseph's Hospital & Medical Center. Contact: John R. Green, M.D. Approved for 1 hour category 1 credit.

Neurology Teaching Conference
Tuesdays, 8:30-9:30 a.m., Eighth Floor Conf. Room.

Neurosurgery Morbidity Conference
Wednesdays, 8:15-9:15 a.m., on first and third weeks, Eighth Floor Conference Room.

Neuro-ophthalmology Conference
Tuesdays, 11:30 a.m. in neuropathology conference room.

Spinal Injury Conference
Wednesdays, 8:15-9:15 a.m., on second and fourth weeks, in Neuropathology Conf. Room—a multidisciplinary review of admission by neurosurgeons, orthopedists, and rehabilitation specialists.

Neuropathology of Gross Specimens Conference
Thursdays, 7:30-8:30 a.m. in the Morgue.

Neurology-Neurosurgical Clinical-Neuroradiological and Neuropathological Conference
Fridays, 8-9 a.m., First Floor Conference Room.

Neuropathology or Neuroradiology Conferences
Fridays, 9 a.m., Neuropathology in Neuropathology Conference Room, Neuroradiology in First Floor Conference Room.

Neurorehabilitation Conference
Tuesdays, noon, 8th Floor Conference Room.

Neurosurgical Journal Club
Saturdays, 9-11 a.m., in Eighth Floor Conference Room.

CAMELBACK HOSPITAL

5055 N. 34th St., Phoenix, AZ 85018. Sponsor: Camelback Hospital. Contact: Medical Director.

Patient Staffing Conference
Three times weekly.

DESERT SAMARITAN HOSPITAL

Wednesday evenings, 7 p.m. Sponsor: Desert Samaritan Hospital. Contact: L.A. Rosati, M.D., Laboratory, Desert Samaritan Hospital, Mesa, AZ 85202. Approved for category 1 credit.

GOOD SAMARITAN HOSPITAL

Clinical Cancer Conference
3rd Wednesday, every month, Butler Bldg. Conference Room, Good Samaritan Hospital. Contact: John A. Bruner, M.D., 926 E. McDowell Road, Phoenix, AZ 85006. Approved for 1 hour per session category 1 credit.

GOOD SAMARITAN HOSPITAL

Pulmonary Disease Grand Rounds
Mondays, 12 Noon, D-5 North Conference Room, Good Samaritan Hospital, Phoenix, AZ. Sponsor: Pulmonary Disease Teaching Service, Good Samaritan Hospital. Contact: Bernard E. Levine, M.D., Pulmonary Function Laboratory, Good Samaritan Hospital, 1033 E. McDowell Road, Phoenix, AZ 85006. Approved for 1 hour category 1 credit.

MARYVALE SAMARITAN HOSPITAL

Continuing Medical Education Program
Maryvale Samaritan Hospital, every other Wednesday, 7-8 a.m., January 25, 1978 through December 27, 1978. Sponsor: Medical Staff of Maryvale Hospital. Contact: Richard C. Christensen, M.D. Approved for 1 hour per session category 1 credit.

MARICOPA COUNTY GENERAL HOSPITAL

2601 E. Roosevelt, Phoenix, AZ 85008. Sponsor: Maricopa County General Hospital. Contact: H.F. Lenhardt, M.D., Dir. of Medical Education. Approved for category 1 credit.

Total Joint Replacement
Oct. 27 & 28, 1978. Maricopa County General Hospital.

7th Annual Radiology Seminar
"Pulmonary Diseases Part II"
Dec. 9 & 10, 1978, Camelback Inn, Scottsdale, AZ 85253.

Recent Advances in Geriatric Psychiatry
January 20, 1979. Maricopa County General Hospital.

5th Annual MCGH Urological Seminar
January 27 & 28, 1979. Doubletree Inn, Scottsdale, AZ 85251.

Current Advances in Obstetrics and Gynecology
Feb. 14, 15 & 16, 1979, Scottsdale Hilton Hotel, Scottsdale, AZ.

Medical Progress: A Review of Advances in Medicine in the Past 5 Years
Feb. 22, 23 & 24, 1979. Carefree Inn, Carefree, AZ 85331.

The Head presented by Department of Radiology, Feb. 9, 10 & 11, 1979. Doubletree Inn, Scottsdale, AZ 85251.

MEMORIAL HOSPITAL

1201 S. 7th Ave., Phoenix, AZ 85036. Sponsor: Memorial Hospital. Approved for category 1 credit.

Monthly Medical Education Seminar
Third Monday, 6:30 p.m., Kiva Conference Room. Contact: George Scharf, M.D.

Tumor Board Conference
Every Friday at Noon, Kiva Conference Room. Contact: Howard Kimball, M.D.

SCOTTSDALE MEMORIAL HOSPITAL

7300 E. 4th St., Scottsdale, AZ 85251. Sponsor: Scottsdale Memorial Hospital. Contact: W.S. Williams, M.D., Director of Medical Education.

Clinical Pathological Conference
4th Monday, monthly, 12:45 p.m.

Family Practice Conference
1st Monday, monthly, 12:45 p.m.

Medical Grand Rounds
3rd Monday, monthly, 12:45 p.m.

Morbidity & Mortality Conference
2nd Monday, monthly, 12:45 p.m.

ST. MARY'S HOSPITAL & HEALTH CENTER

1601 West St. Mary's Rd., Tucson, AZ 85703. Sponsor: St. Mary's Hospital & Health Center. Contact: see below.

Monthly Specialty Conference of the Department of Surgery
First Monday, monthly, 7:30 a.m., Century Room A. Contact:, Medical Staff Office. Approved for 1 hour of category 1 credit.

Grand Rounds: Medical, Surgical, Family Practice, Pathology, Radiology
Weekly, Thursday, 7-8:30 a.m. Contact: Richard A. Silver, M.D. Approved for 1 hour category 1 credit.

U OF A HEALTH SCIENCES CENTER

Tucson, AZ 85724. Sponsor: U of A College of Medicine. Contact: See below. Approved for category 1 credit.

Clinical Immunology, Allergy & Rheumatology Rounds
Every Friday, Noon-1 p.m. Contact: John Boyer, M.D., Dept. of Internal Medicine.

Cerebrovascular Disease Conference
Mondays, 5-6 p.m., weekly, Room 5505. Contact: Wesley Moore, M.D., Depts. of Surgery, Neurology & Radiology.

Dean's Clinical Rounds
October 18, 1978, Main Auditorium, UAHSC. Contact: Louis J. Kettel, M.D.

Endocrinology Seminar
Every Thursday, Noon-1 p.m., 1st, 3rd & 5th Thursday, Room N318, VA Hospital. 2nd & 4th Thursday, Room 6505, Tucson Medical Center. Contact: Dept. of Internal Medicine.

Hematology-Oncology Clinical Conference
Every Tuesday, Noon-1 p.m., 1st, 3rd & 5th Tuesdays, Room 6505, Tucson Medical Center. 2nd & 4th Tuesdays, Room N318, VA Hospital. Contact: Sidney Salmon, M.D., Dept. of Internal Medicine.

Medical Grand Rounds
Every Wed., Noon-1 p.m., 1st, 3rd & 5th Wed., Staff Conf. Room, VA Hospital. 2nd & 4th Wed., Room 5403, UAHSC. Contact: Jay Smith, M.D., Dept of Internal Medicine.

Nuclear Medicine
Thursday, 7:30 a.m., Radiology Conf. Room, UAHSC. Contact: Irwin M. Freundlich, M.D., Dept of Diagnostic Radiology.

eurology Grand Rounds
very Friday, Noon, 1st, 3rd & 5th ridays, UAHSC, Room 7505. 2nd & 4th ridays, VA Hospital. Contact: William A. ibley, M.D., Dept. of Neurology.

europathology Review Conference
hursdays, 8:30 a.m., Room 5120, AHSC. Contact: Peter C. Johnson, M.D.

eurosciences Seminar
very Friday, 7:30 a.m., UAHSC, Room 505. Contact: Colin R. Bamford, M.D., or ose F. Laguna, M.D., Dept. of Neurolo- y.

athology Seminar
riday, 4:30-5:30 p.m., Room 5120, AHSC. Contact: Kenneth Ryan, M.D., ept. of Pathology.

Tucson Pathologist Conference
First Monday of the month, 7:30-9 p.m. Rotation between Tucson Pathology Conf Rooms. Contact: Merel Clard, M.D., Tucson Pathologists.

Pediatric Grand Rounds
very Tuesday, 12:30-1:30 p.m. Alternates etween Tucson Medical Center & AHSC. Contact: Hugh Thompson, M.D., ept. of Pediatrics.

Problem Case Workshop
3rd Monday of each month, 7:30 a.m., Room 4410, UAHSC. Contact: H.E. Cross, M.D., Ph.D., Div. of Ophthalmology.

Psychiatric Grand Rounds
Every Wednesday, Sept. to May 4, 5:30 p.m., Room 8403 UAHSC. Contact: Alan Levenson, M.D., Dept. of Psychiatry.

Chest Radiology
Monday, 5-6 p.m., weekly, Room 1535F, UAHSC. Contact: Irwin M. Freundlich, M.D., Dept. of Radiology.

Gastrointestinal Radiology
Mondays, 7:30 a.m., weekly except for summer months. Contact: Irwin M. Freundlich, M.D., Dept. of Radiology.

Radiation Oncology Planning Conference
Friday, weekly, 8:30-10 a.m., UAHSC, Room 0655. Contact: Robert S. Heusinkveld, M.D., Radiation Oncology Section.

Radiology-Rheumatology Conference
Thursday, 8 a.m., UAHSC, Library Room 1535C. Contact: Irwin M. Freundlich, M.D., Dept. of Radiology.

Vascular Radiology
January-June 1978, 7:30 -8:30 a.m., every Friday. Contact: Irwin M. Freundlich, M.D., Dept. of Radiology.

Radiology Interesting Case Conference
Thursday, Noon, VA Hospital. Contact: Irwin M. Freundlich, M.D., Dept. of Radiology.

Resident's Conference
Wednesday, weekly 5-6 p.m., Diag. Radiology Conf. Room. Contact: Irwin M. Freundlich, M.D., Dept of Radiology.

Trauma Conference
Every Thursday, 4-5 p.m. UAHSC, Room 5505. Contact: Martin Silverstein, M.D., Dept. of Surgery.

Grand Ward Rounds—Trauma
Every Tuesday, 8 a.m., UAHSC. Contact: Martin Silverstein, Surgery Dept., Trauma Section.

Monthly Meeting Tucson Ultrasonography Group
First Wednesday of month, 4:30-5:30 p.m., UAHSC. Contact: Irwin M. Freundlich, M.D.

Tucson Urological Society Scientific Meeting
Monthly. Contact: George W. Drach, M.D., Depts of Surgery & Urology.

General Urology Conference
Tuesday, 5-6 p.m. Thursday, Noon-1:30 p.m., UAHSC Meeting Rooms & VA Hospital. Contact: George W. Drach, M.D., Dept. of Surgery/Urology Section.

VETERANS ADMINISTRATION HOSPITAL

7th Street and Indian School Rd., Phoenix, AZ 85012. Sponsor: VA Hospital. Contact: Jasper L. McPhail, M.D. Approved for category 1 credit.

Cancer Symposium
Each Wednesday, 1 p.m., T-5.

Cardiology Conference
2nd Thursday, 1 p.m., T-5.

Medical-Surgical Chest Conference
1st and 3rd Thursday, 1 p.m., T-5.

Clinicopathology Conference
4th Thursday of 3rd Mo. (Mar., June, Sept. & Dec.), 1 p.m., T-5.

Dermatology Conference
1st, 2nd & 3rd Wednesday.

Hepathology Conference
2nd and 4th Tuesday, 1 p.m., 2128.

Gastroenterology Conference
1st and 3rd Tuesday, 1 p.m., T-5.

GI Conference
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4th Friday, 1 p.m., T-5.

GI Radiology Clinical Correlation Conference
Each Tuesday, 1 p.m., T-5.

Medical Surgical GI Conference
1st & 3rd Friday, 2 p.m., 2128.

Medical Service Grand Rounds
Each Friday, 11 a.m., T-5.

Surgery-Pathology Conference
Each Thursday, 7 a.m., 2128.

Urology-Pathology Conference
Each Wednesday, 7 a.m., 2128.

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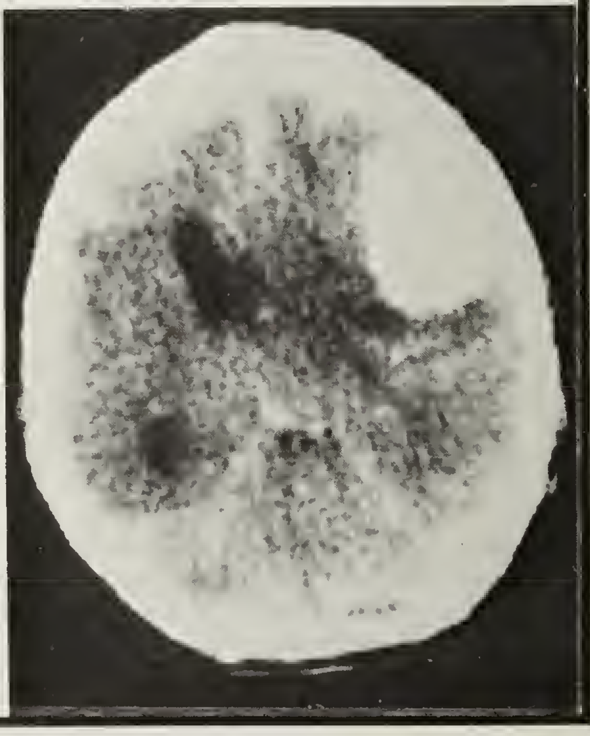

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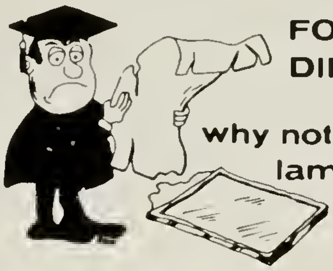

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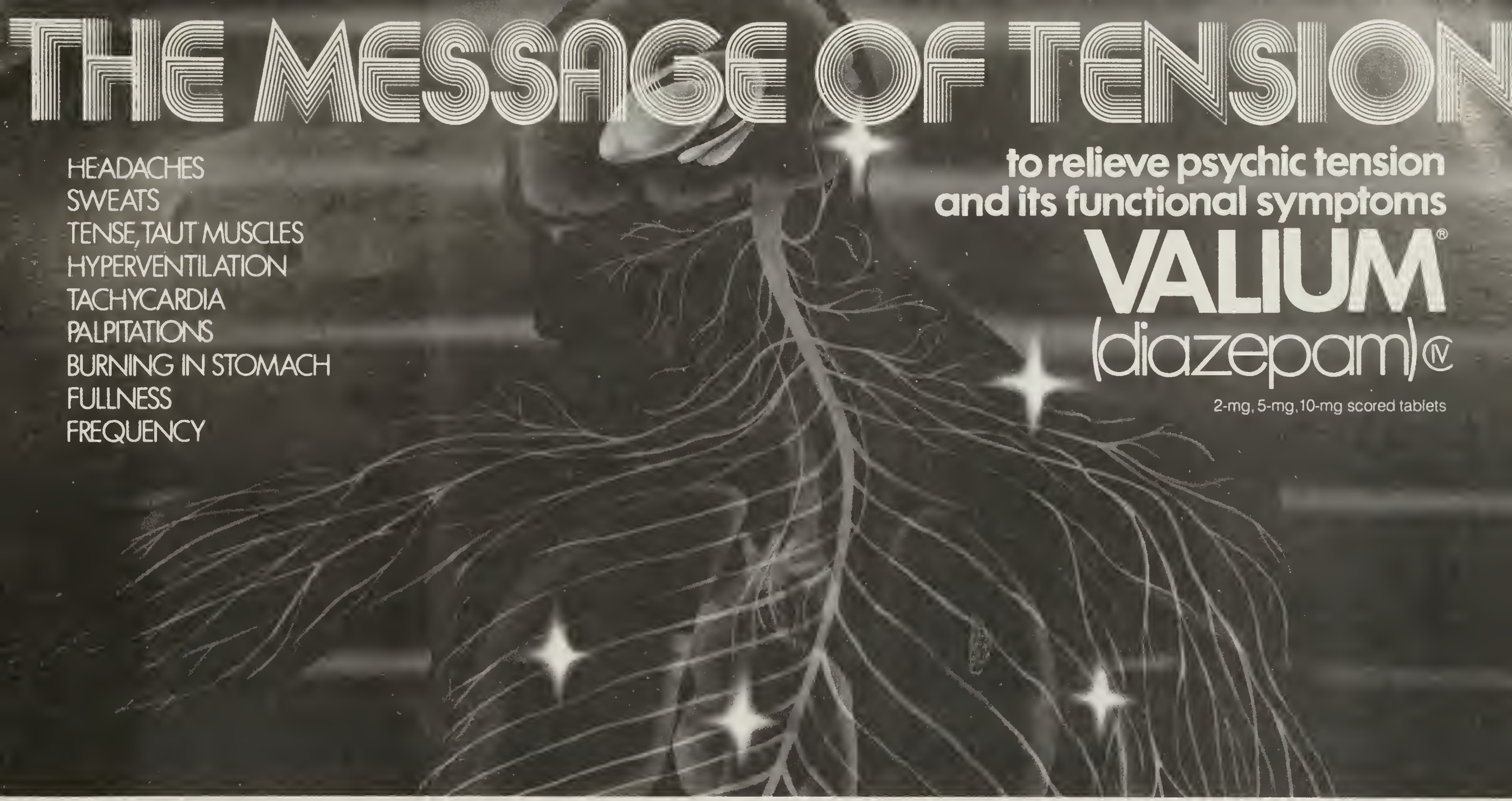

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Important Note: When it is judged necessary that treatment be initiated before definitive culture and sensitivity results are known, the choice of cloxacillin sodium should take into consideration the fact that it has been shown to be effective only in the treatment of infections caused by pneumococci, Group A beta-hemolytic streptococci, and penicillin G-resistant and penicillin G-sensitive staphylococci. If the bacteriology report later indicates the infection is due to an organism other than a penicillin G-resistant staphylococcus sensitive to cloxacillin sodium, the physician is advised to continue therapy with a drug other than cloxacillin sodium or any other penicillinase-resistant semi-synthetic penicillin.

Recent studies have reported that the percentage of staphylococcal isolates resistant to penicillin G outside the hospital is increasing, approximating the high percentage of resistant staphylococcal isolates found in the hospital. For this reason, it is recommended that a penicillinase-resistant penicillin be used as initial therapy for any suspected staphylococcal infection until culture and sensitivity results are known.

Cloxacillin sodium is a compound that acts through a mechanism similar to that of methicillin against penicillin G-resistant staphylococci. Strains of staphylococci resistant to methicillin have existed in nature and it is known that the number of these strains reported has been increasing. Such strains of staphylococci have been capable of producing serious disease, in some instances resulting in fatality. Because of this, there is concern that widespread use of the penicillinase-resistant penicillins may result in the appearance of an increasing number of staphylococcal strains which are resistant to these penicillins.

Methicillin-resistant strains are almost always resistant to all other penicillinase-resistant penicillins (cross-resistance with cephalosporin derivatives also occurs frequently). Resistance to any penicillinase-resistant penicillin should be interpreted as evidence of clinical resistance to all, in spite of the fact that minor variations in *in vitro* sensitivity may be encountered when more than one penicillinase-resistant penicillin is tested against the same strain of staphylococcus.

Contraindications: A history of a previous hypersensitivity reaction to any of the penicillins is a contraindication.

Warning: Serious and occasionally fatal hypersensitivity (anaphylactoid) reactions have been reported in patients on penicillin therapy. Although anaphylaxis is more frequent following parenteral therapy it has occurred in patients on oral penicillins. These reactions are more apt to occur in individuals with a history of sensitivity to multiple allergens.

There have been well documented reports of individuals with a history of penicillin hypersensitivity reactions who have experienced severe hypersensitivity reactions when treated with a cephalosporin. Before therapy with a penicillin, careful inquiry should be made concerning previous hypersensitivity reactions to penicillins, cephalosporins, and other allergens. If an allergic reaction occurs, the drug should be discontinued and the patient treated with the usual agents, e.g., pressor amines, antihistamines, and corticosteroids.

Safety for use in pregnancy has not been established.

Precautions: The possibility of the occurrence of superinfections with mycotic organisms or other pathogens should be kept in mind when using this compound, as with other antibiotics. If superinfection occurs during therapy, appropriate measures should be taken.

As with any potent drug, periodic assessment of organ system function, including renal, hepatic, and hematopoietic, should be made during long-term therapy.

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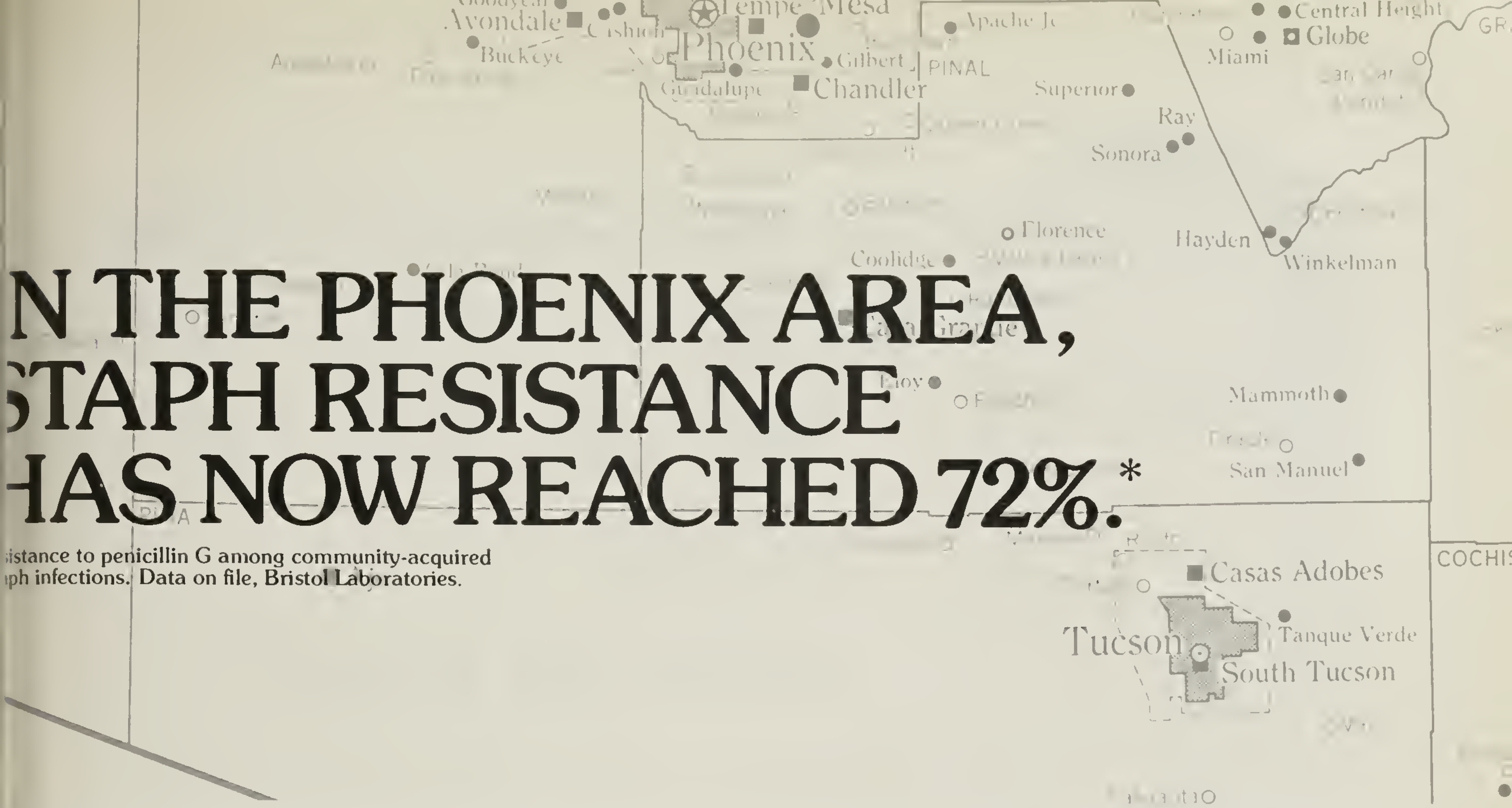

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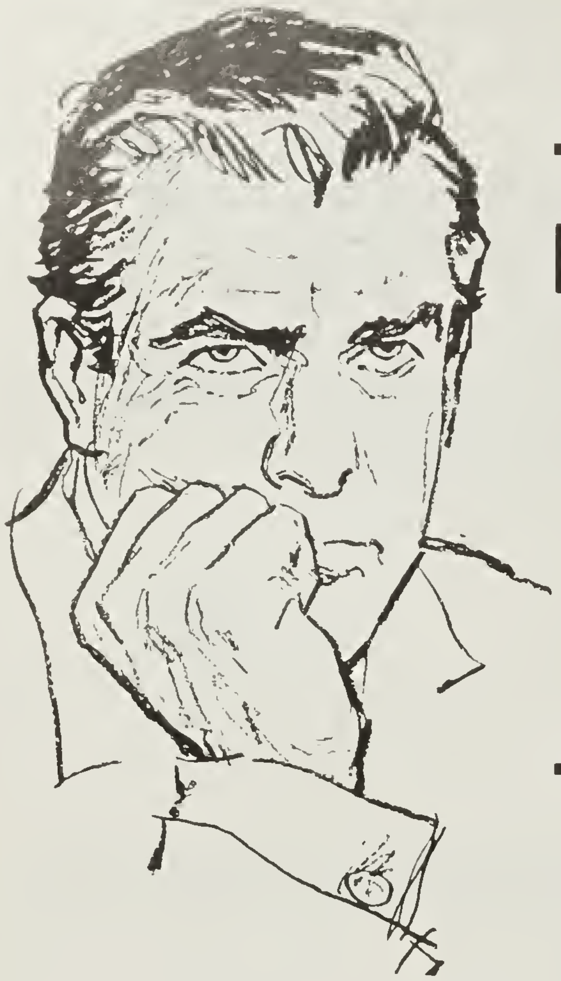

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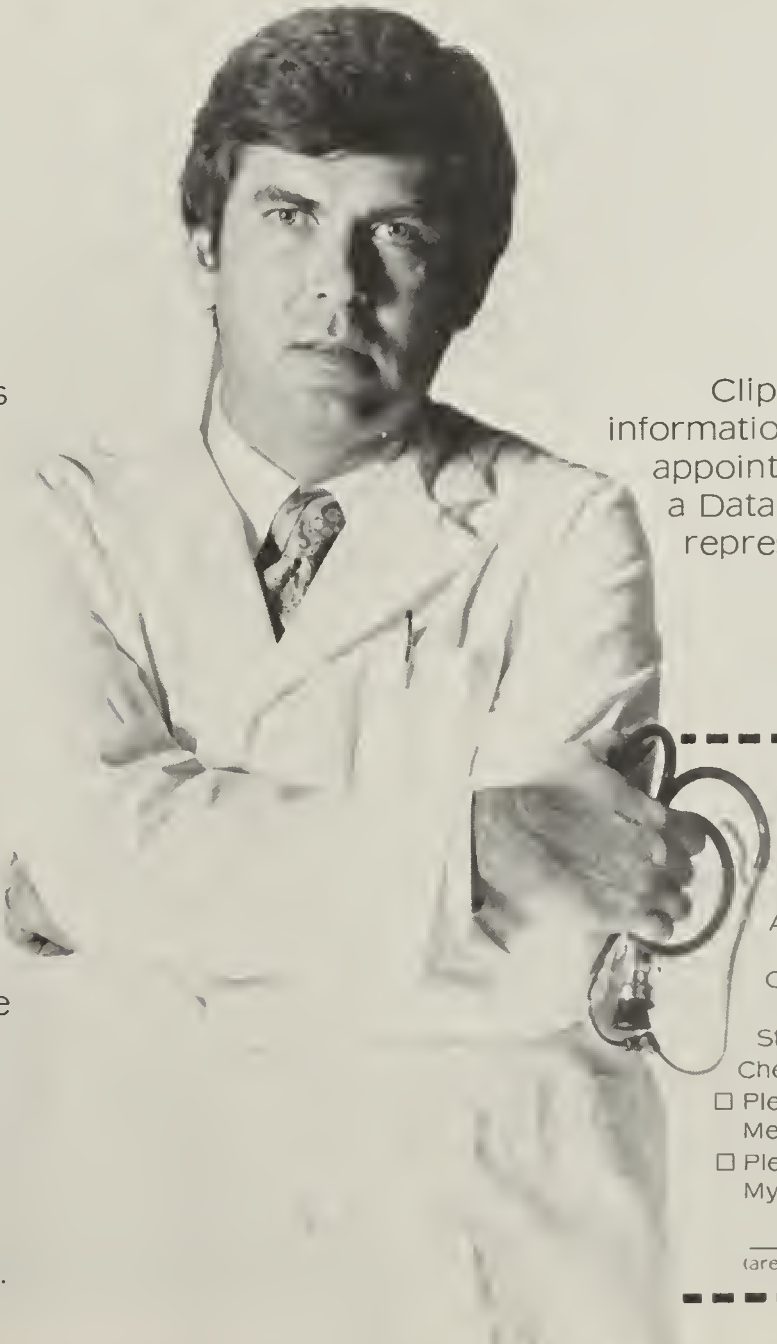

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THE CHICAGO DEPARTMENT OF HEALTH

NEWS LETTER

VOL. 18, NO. 1, MAY, 1978

AUTOMATIC BLOOD PRESSURE DEVICES

A Chicago Department of Health report on the Vita-Stat automated blood pressure machines concludes that their consistency and accuracy is sufficient for screening purposes.

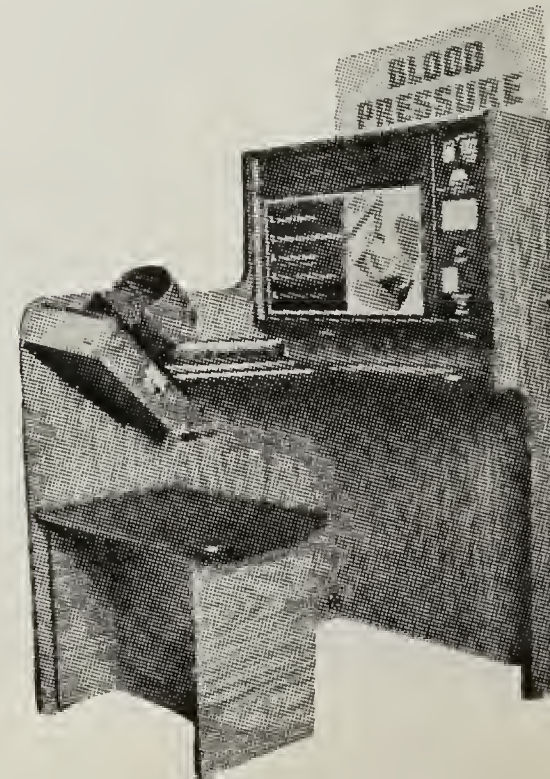
The report, the first in the nation based on a scientific study by a public agency, was prepared under the direction of Dr. David M. Berkson, the Department's heart disease control officer. It consists of (1) a statistical evaluation by Drs. Shekelle and Raynor of Rush-Presbyterian St. Luke's Medical Center, based on data collected over a four month period by Lawrence Shireman and Thomas Whipple and their co-workers in the Health Department, and (2) an evaluation of the results with recommendations for regulatory actions if deemed necessary. The report notes at the outset that any assessment of automatic blood pressure devices must compare their measurements with measurements by trained observers recorded by the traditional cuff ausculatory method. Since blood pressure may vary rapidly, the assessment of accuracy of measurement is difficult.

"In our evaluation of the Vita-Stat machine," the report states, "we found that, when the machine and a trained observer measure blood pressure simultaneously, there is a very good agreement." It is essential, however, that a machine must perform well in sequential measurement with trained observers as well as in simultaneous measurement. In sequential measurement the machine, in general, has a fair degree of accuracy. It does not perform as well, however, as trained technicians. In the laboratory analysis of the comparison between one machine and several technicians the machine tended to read systolic pressure 3.4mm higher and diastolic pressure 2.3mm lower. In the field analysis the machine tended to read systolic blood pressure 1.5mm and diastolic pressure 0.5mm higher than the technicians.

Although agreement between technicians in mean blood pressure measurement and in categorizing persons as normal, borderline or hypertensive tends to be closer than technician-machine agreement, these differences are small and of little practical significance in screening.

The report recommends that if licensing is insituted by the City of Chicago, periodic recalibration and testing should be required. The public must be informed that these instruments serve merely as screening devices; that they do not replace medical consultation and that, because blood pressure is subject to variation, several elevations or lack of elevations do not constitute a diagnosis of hypertension or normotension.

Blood pressure readings must be interpreted by a qualified medical professional and self-adjustment of medication based on automated blood pressure readings without medical supervision may be dangerous. The report concludes "that although the Vita-Stat machine does not perform as well as trained technicians, its consistency and accuracy is sufficient for screening purposes."



AM Seminars in Chest Medicine

Skills of the Health Team Involved in Out-of-Hospital Care for Patients with COPD

Position Paper approved by the American Thoracic Society's Scientific Assembly on Clinical Problems and its Section on Nursing*

Editors:
Robert J. Clark, M.D.
Lynn M. Taussig, M.D.
William C. Weese, M.D.

The individual with chronic obstructive pulmonary disease (COPD) requires longterm care owing to the nature of this disease. The goals of long-term care are to improve and maintain the ability of the individual to function as independently as possible, to cope with progressive impairment, and to reduce the gap between actual and potential function. Owing to the nature of COPD, the process of care must be comprehensive and continuous, with particular attention given to ambulatory and home-based services. All long-term care must be concerned with total physical, mental, and social functioning of the individual as well as with the medical diagnosis.

This Statement identifies the skills or competencies required of those practitioners who provide services to ambulatory and homebound individuals with COPD. Successful management of the individual's problems depends on the cooperation of many disciplines, services, and support systems.

The services required are many and varied. For any one individual, the services required must be based on a comprehensive assessment of need and level of function. These essential services have been delineated by the Task Force on Continuing and Comprehensive Care for

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*Comments on this position paper are welcomed. It is not a final statement of ATS.

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Patients with COPD.[1] In the provisions of these services, there is often no clear boundary between medical and nursing services, medical and social services. The roles of all members of the health team are interchanged, depending on the needs of each individual requiring care. For this reason, the Statement does not concern itself with the specific role of each professional group or with the structure within which services are given to individuals with COPD.

The establishment of the diagnosis and the medical regimen is the responsibility of the physician. Provision for the services necessary to carry out the health care regimen is the responsibility of the health care team. This team of providers includes physicians, both primary care physicians and specialists in pulmonary medicine; respiratory nurse specialists and nursing personnel of all levels; respiratory therapists and technicians; social service personnel; vocational counselors; physical therapists; homemakers; other health workers, patients, and their families. The functions of each of these team members in any one situation will vary, depending on the needs of the patient, the availability of the members of each discipline, and the organization of resources in the community. The effectiveness of team function depends on an adequate system of communication between the health team members and articulation of the services and facilities.

The skills identified in the Statement are those that are required to assist the patient and his or her family to minimize anxiety, maintain highest functional level (on continuum from ADL's work), minimize complications and possible resulting hospitalization, maintain economic security, and maintain ready access to a series of services at the time needed.

To facilitate the patient's movement toward these goals, the health care team providing services should include practitioners who possess the following competencies:

(1) Ability to examine patient for the diagnosis and treatment of not only COPD but all other important associated health problems, utilizing history, physical examination, and laboratory studies such as roentgenogram, electrocardiogram, and blood chemistries.

(2) Ability to provide continuous medical follow-up observation, and evaluation of patients with COPD and referral for consultation, when necessary, to specialists.

(3) Ability to evaluate psychosocial response to illness, to interview patients and family, to intervene and counsel patients and families in those aspects of care that will assist them to cope with problems of daily living.

(4) Ability to teach patients and families concepts concerning the illness and treatment, including assessing their readiness to learn, determining the appropriateness of material to be taught, evaluating their response to teaching.

(5) Ability to perform and interpret spirometry and selected additional pulmonary function tests; to perform and interpret arterial blood gas studies.

(6) Ability to recognize need for and to teach the specific techniques, such as bronchial hygiene, exercise conditioning, and energy conservation in activities of daily living.

(7) Ability to utilize and maintain respiratory therapy equipment and to modify its use, according to patient response.

(8) Ability to assist patients to identify and utilize appropriate community resources.

(9) Ability to effect safe transfer of an acutely ill patient to a general hospital and to provide for immediate admission to a unit competent to care for his or her needs.

(10) Ability to determine vocational potential and to provide job retraining and job placement.

(11) Ability to plan, coordinate, and evaluate care.

It is important that the skills and competencies included here be available to each patient and that the care provided be coordinated by one professional health practitioner. The decision as to which health professional will provide and coordinate the services should be made on the basis of who on the health team possesses the greatest number of the skills required to provide the care.

It is recognized that there are currently no available data that demonstrate the effectiveness of a comprehensive long-term care program for the individual with COPD in terms of changes in any of the physiologic parameters. However, clinical investigations that have been undertaken do support the role of this long-term care in assisting the individual to maintain or improve his or her functional ability in self-care and continued employment[2-8]. It is recommended that well-controlled prospective studies be done to validate the cost effectiveness of long-term care for individuals with COPD.

This paper was prepared by the Ad Hoc Committee of the Section on Nursing of the Scientific Assembly on Clinical Problems. The Committee members are as follows:

JOANNE MEANY, *Chairperson*
LILLIAN COLE
BARBARA EDELMAN
LOUISE KILLINGSWORTH
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Seminars in
Gastroenterology
and Liver Disease

Two Rare Causes of Portal Hypertension

The Importance of Establishing the Cause

Leon A. Rigberg, M.D.

Editors:
Leon Rigberg, M.D.
Stephen Glouberman, M.D.
George Burdick, M.D.

When one thinks of portal hypertension with associated esophageal and gastric varices, the usual etiology is some form of chronic liver disease, (i.e. sinusoidal hypertension). In the United States, alcohol, post viral hepatitis and drugs are the three leading agents associated with chronic liver disease. Post-sinusoidal factors contributing to portal hypertension are congestive heart failure of multiple etiologies, hepatic vein thrombosis, carcinoma and trauma. Pre-sinusoidal factors contributing to portal hypertension are parasites, trauma to the portal system, thrombosis and carcinoma (particularly that of the pancreas).[1,2] Several cases of esophageal varices have been reported to be associated with hiatal hernia.

Variceal veins do exist anatomically and only become prominent when alterations in portal pressure and flow patterns occur. Esophagitis, gastritis, fatty liver, alteration in the coagulation system are a few possible predisposing factors in variceal bleeding.

Diagnosis by barium swallow demonstrates varices 50% of the time, whereas, endoscopy success approaches 90%. The early diagnosis of bleeding varices is necessary to insure correct management by medical, invasive and surgical techniques.

The following two case discussions are unusual forms of portal hypertension:

S.P. was a 22 year old female admitted with a history of anemia and black stool. The patient had noted black stool in 1973 and again in 1975. She had a history of abdominal trauma in 1971 and had been on birth control pills from 1971 to 1973. She noted petechia and eccyhymotic areas in 1975 and was diagnosed as having gastrointestinal (GI) bleeding, possibly from ETP, with resultant splenectomy. In 1977, she moved to Phoenix and was found to be anemic with response to iron therapy. Her symptoms at this time were weakness, fatigue, weight gain of 20 pounds and anemia of 6 gms. %. She denied a history of hepatitis, drug abuse, alcohol abuse, family history of liver disease or blood transfusions. Her physical examination revealed a pale female with spider angiomata on her face and chest. A grade II/VI flow murmur across the aortic valve was present with abdominal findings of distention and clinically apparent ascites. Hemoccult positive stool and two external hemorrhoidal veins were present on rectal examination.

Diagnostic paracentesis was performed which revealed a "clear water" transudatitive fluid with SpGr. 1.003.

A multiphasic profile, coagulation studies and liver scan were all within normal limits. Endoscopy revealed esophageal and gastric varices and sigmoidoscopy demonstrated internal hemorrhoids. To further evaluate the liver, and the pelvic organs, a laparoscopic examination was

---

From: 515 W. Buckeye Rd., Phoenix, AZ 85003.

performed. This demonstrated a normal liver, omentum, peritoneum and mesentery. Except for a small ovarian cyst, the pelvic area was normal. Small Bowel Series suggested edema of the jejunal mucosa. Angiographic studies demonstrated esophageal and gastric varices plus almost total occlusion of the superior mesenteric vein, inferior mesenteric vein, attenuation of the splenic vein, almost total occlusion of the portal vein and marked mesenteric variceal veins, all of which drained into a small area at the porta hepatus.

This patient was referred to a vascular surgeon for a selective portocaval shunt. At the time of surgery, there was complete thrombosis of the mesenteric system, splenic and portal veins. A large vessel parallel to the ileocolic artery was anastamosed to the distal inferior vena cava and the portal system appeared to decompress with a reduction in portal pressures.

She has been followed for almost one year and has not had evidence of GI bleeding or ascites re-accumulation. Her liver was normal at the time of surgery. The etiology of the portal system thrombosis is either related to the birth control pills or the abdominal trauma.

The etiology of ascites without co-existing liver disease is not well understood and in this case a normal serum albumin was present. The ascites may have represented transudate from small intestine secondary to marked mesenteric varicose veins.

This case demonstrated the value of a logical medical evaluation, eliminating the more common causes or portal hypertension and eventuating in a definitive treatment.

The second case presentation is a most unusual case of upper intestinal bleeding and, I believe, previously unreported:

This is a 79 year old, white female, who presented with acute upper intestinal bleeding and hemorrhagic shock. Immediate therapeutic measures including fluid replacement "G-suit" placement and administration of initially untyped blood, stabilized this patient's condition so further history could be obtained. She did state that approximately ten days prior to her admission she fell on the back of the table, striking the spine and the left shoulder area. For several days after this fall she experienced anorexia, nausea and mild satiety. She denied a history of alcohol consumption, ulcer disease, hepatitis or past blood transfusions, but had worked as a nurses aide in the state hospital for the past 20 years with multiple exposures to hepatitis patients.

Her admitting hemoglobin was 6 gms. % and her blood pressure was 80/40. Physical examination revealed no abdominal masses or skin findings of chronic liver disease.

She was moved to the Intensive Care Unit, at which time Esophagogastroduodenoscopy was performed. This revealed a large gastric varix with approximately a 7 cm. submucosal hematoma within the fundic portion of the stomach and evidence of grade I/IV esopohageal varices. The esophageal, gastric and duodenal mucosa was found to be normal.

Following this observation, the patient was treated with low dose intravenous infusion of Pitressin at 0.2 pressor units per cc. per minute for 10 hours.[3] The infusion was then terminated. Blood and fluid replacement corrected the shock state. No further bleeding was reported. Arteriography was performed within 24 hours of admission, which revealed normal celiac and superior mesentery arteries and a normal portal system with no evidence of esophageal or gastric varices. Upper GI Series performed, thereafter, revealed normal esophagus, stomach and duodenum with no evidence of displacement of the duodenal loop. Liver scan, HBsAg and multiphasic chemical studies were all normal. Repeat Esophagogastroduodenoscopy was performed 72 hours after the initial procedure. At this time there was no evidence of the previously noted esophageal and gastric varices and the gastric hematoma had completely disappeared. The gastric mucosa revealed no evidence of ulcer disease or gastritis.

The patient was discharged approximately one week following her admission and is doing well.

This case represents an unusual pathologic condition probably initiated by her fall, producing a gastric hematoma within the fundal region of the stomach. This hematoma probably accounted for the patient's initial nausea, vomiting, satiety and anorexia. It can only be theorized that the hematoma was responsible for the pressure changes within the gastric venous drainage system and was ultimately responsible for the production of esophageal and gastric varices. The resulting hemorrhage from this hematoma, along with the Pitressin infusion, produced a rapid decrease in pressure within the portal system, accounting for normal findings on the arteriography, 24 hours after her admission. Our diagnostic studies eliminated the usual causes of portal hypertension and GI Series revealed a normal gastric fundus.

The valve of early endoscopic diagnosis was noted in this case along with the therapeutic application of low dose systemic Pitressin. When multiple injuries to the abdomen or to the back occur, associated with vague symptoms of anorexia, nausea, satiety, intra-abdominal pathology should be suspected. Thrombosis and/or hematoma formation within the gastric wall (submucosal and/or muscular area) should be considered along with other major differential diagnosis, such as pancreatitis and pseudocyst, ruptured liver and spleen and internal hernia. The etiology of portal hypertension should always be pursued since those individuals with pre and post sinusoidal hypertension may have a greater chance for survival than would those with chronic liver disease.

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Neurology

Revascularization of the Brain

L. Philip Carter, M.D.

Editors:
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Lawrence Z. Stern, M.D.

Cerebral vascular disease is the third leading cause of death in developed countries as well as being a major cause of disability.[1] Cerebral ischemia may be caused from a cardiac abnormality such as an arrhythmia or embolic source, extracranial vascular disease, or intracranial vascular disease. The precise diagnosis can only be established through the judicious use of cerebral angiography. Frequently, extracranial vascular disease will be amenable to an established vascular procedure such as carotid endarterectomy. On the other hand, patients are frequently found with completely occluded internal carotid arteries or intracranial occlusive disease such as middle cerebral artery (MCA) stenosis or occlusion. These problems have challenged the neurological surgeon to develop techniques to augment the cerebral blood flow.

In an attempt to supply the ischemic brain with a supplemental blood supply Donaghy and Yasargil developed the technique of superficial temporary artery to middle cerebral artery anastomoses (STA-MCA). This was first performed in a human in 1967 and required microsurgical techniques to accomplish an end to side anastomoses in vessels 1 to 2 mm in outside diameter.[2,3]

The operation consists of exposing the superficial temporal artery (STA) in the scalp, passing it through a small craniotomy and microsuturing the end of the STA to the side of a cortical branch of the MCA. (See Illustrations 1 and 2.) If successful, this provides a bypass of more proximal obstructive vascular disease. It is apparent that this procedure has no value for a completed infarction or in embolic disease.

In the eleven years since its development, extracranial to intracranial arterial bypass (EIAB) has been performed in many institutions. Surgical mortality is reported as less than 5% and permanent morbidity of 1 to 3%.[4,5] Patency rate with microanastomosis in most centers is approaching 90%.[5] In addition EIAB is now being used to improve vertebral basilar circulation as well as to augment flow distal to some large aneurysms which may then be treated by proximal occlusion.

CASES

Over the past two years STA-MCA has been performed at the Barrow Neurological Institute. Three of these cases will be presented to illustrate some of the indications as well as the complications of the procedure. The third case represents the single operative mortality in the group, although it should be noted that one patient who did have the procedure died approximately six months later of a myocardial infarction unrelated to the cerebral vascular problem.

Case #1

A 55-year-old right-handed diabetic, hypertensive, white male was admitted with an episode of difficulty controlling his right arm and expressive aphasia. Two years prior to this episode he had a similar problem of right upper extremity and right facial weakness associated with right homonymous hemianopsia which partially

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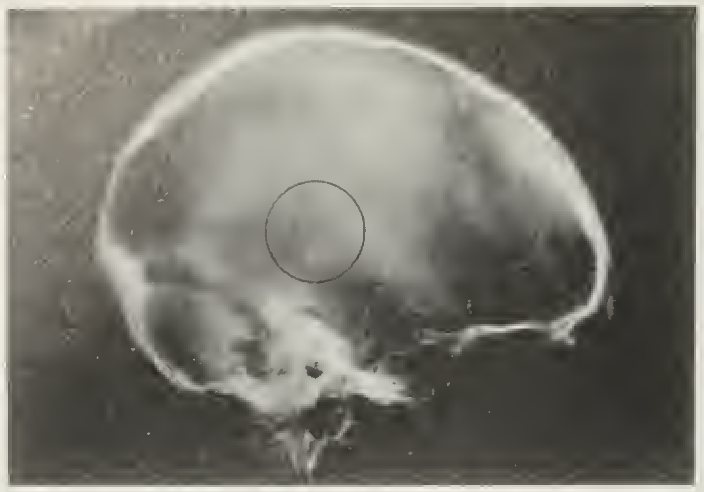
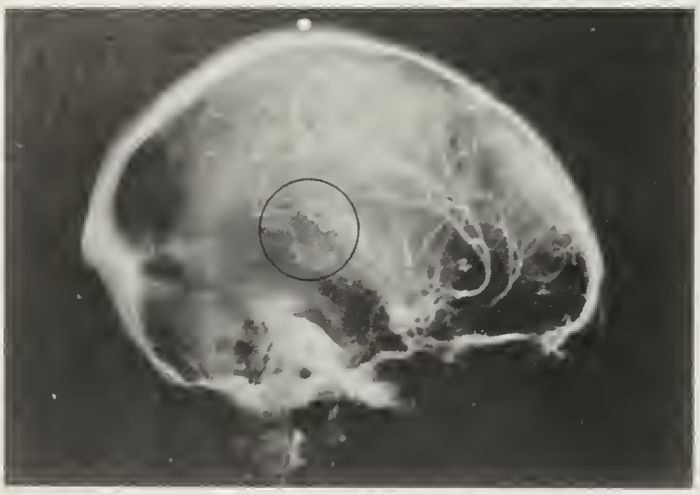
From: The Microsurgical Laboratory, Barrow Neurological Institute of St. Joseph's Hospital and Medical Center, 302 W. Thomas Rd., Phoenix, AZ 85013.



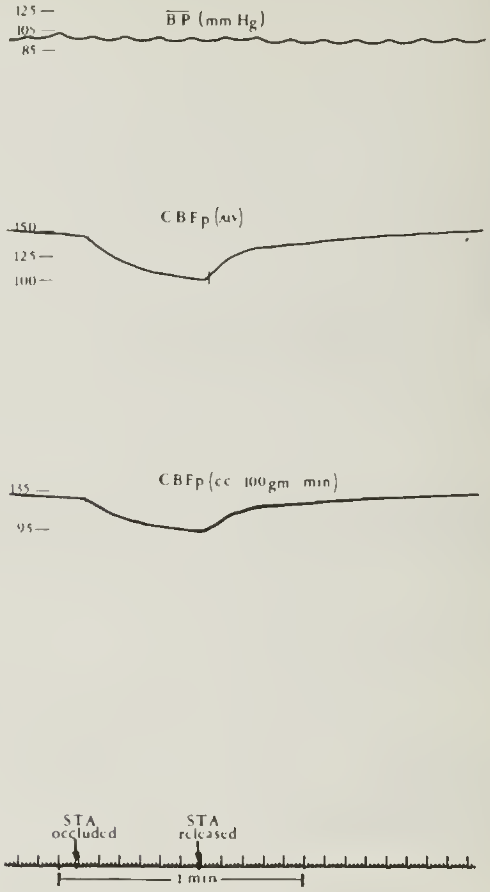
1. External carotid angiogram showing an adequate STA just anterior to the circle which represents the craniotomy site. The STA is mobilized and passed through the craniotomy for anastomoses with the underlying MCA.



2. Common carotid angiogram demonstrating the branches of the MCA underlying the usually craniotomy site for STA-MCA.

cleared over a two-week period, leaving only the visual field defect. Examination on admission revealed a mild right homonymous hemianopsia, a right-sided weakness and hypalgesia with sparing of the face. Bilateral carotid bruits were noted. CT scan (computed tomography) demonstrated an area of increased density in the left posterior frontal region, thought compatible with a hemorrhagic infarction. Complete cerebral angiography showed severe stenosis of the left internal carotid artery above the bifurcation with complete occlusion of the middle cerebral artery. Some collateral circulation occurred through the ophthalmic and anterior communicating arteries. Over the next eight weeks the patient's symptoms cleared and a repeat CT scan demonstrated clearing of the hemorrhagic area previously described.

A left STA-MCA was performed. During surgery, after the anastomosis was completed, a temporary clip was placed on the superficial temporal artery and a definite drop in cerebral blood flow as recorded with thermal diffusion flow probe was observed.[6] (See Illustration #3.) Postoperatively he made an uneventful recovery. The anastomosis was found to be functional with the Dopplar flow probe; however, the patient refused postoperative angiography. At the present time the patient has no neurological symptoms, and on confrontation the right homonymous hemianopsia has cleared.

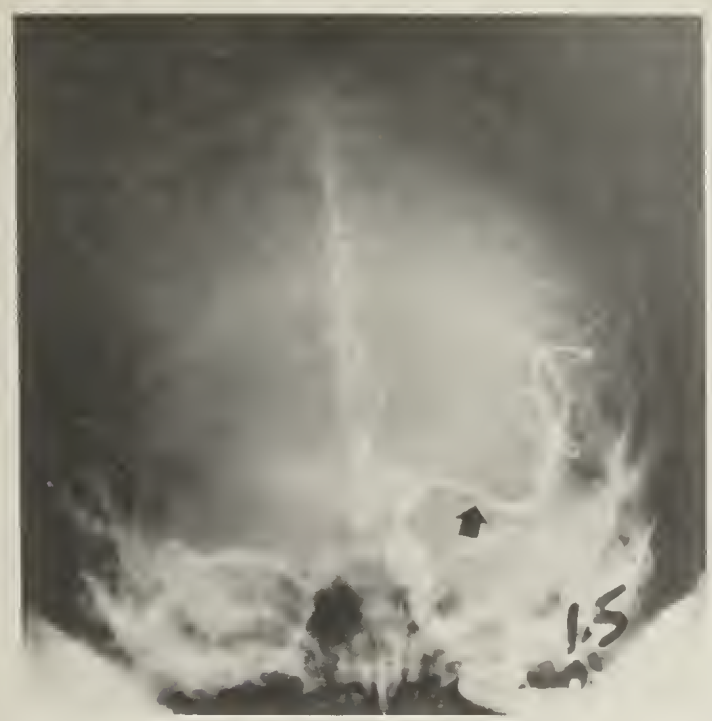


3. Cerebral blood flow as measured by a thermal diffusion flow probe approximately 2 cm from the completed anastomosis before, during, and after occlusion of the superficial temporal artery (STA). BP is mean blood pressure in mm Hg. CBFp is cortical blood flow as determined by the thermal diffusion flow probe in mv (microvolts) or cc per 100 gm of tissue per minute.

This case illustrates the need for complete cerebral angiography in patients with cerebral vascular disease. The symptoms were referable to the middle cerebral artery occlusion despite the presence of an internal carotid stenosis proximal to this. With occlusion distal to the stenotic segment, the benefit of carotid endarterectomy would be highly questionable. The STA-MCA therefore provides increased flow into the area of concern by circumventing the occluded MCA.

Case #2

A 75-year-old right-handed white male with a past history of hypertension found that he could not move his right side and could not speak after an unsuccessful attempt at masturbation. This cleared in about ten minutes — only to be followed by a similar episode later in the day when he was welding. During hospitalization he had two further episodes of an unusual feeling of his right body side. Neurological examination was normal, a nuclear brain scan demonstrated decreased flow through the left MCA, and CT scan was normal. Cerebral angiography demonstrated only a minimal abnormality of the carotid bifurcation. However, there was a significant left middle cerebral artery stenosis noted. (See Illustration #4.) Two weeks after the onset of symptoms the patient



4. AP left cerebral angiogram demonstrating left MCA stenosis at arrow.

underwent a left STA-MCA anastomosis without complications. He had no further transient ischemic episodes and six weeks postoperatively had repeat angiography that demonstrated patency of the anastomosis. To date the patient has had no further symptoms of paresis or aphasia.

The above case represents probably the ideal patient for EIAB, one who has MCA stenosis causing cerebral ischemia without actual infarction.

Case #3

A 70-year-old right-handed white male retired painter presented with episodes of right-hand weakness and some aphasia of two months' duration. In addition, the patient noted problems understanding written material but had no abnormal sensory or visual complaints.

A brain scan demonstrated decreased left hemisphere perfusion without evidence of infarction. CT scan identified a low density region in the posterior left temporal lobe. Angiography demonstrated left internal carotid artery stenosis with MCA occlusion. In addition, the left vertebral artery was occluded. The patient underwent left STA-MCA, and postoperatively was unchanged neurologically with the exception of some increased dysphasia. Thirty-eight hours postoperatively the patient became quite agitated, had an increase in blood pressure, and a subsequent respiratory arrest. Following intubation and resuscitation he was comatose and demonstrated bilateral decerebrate posturing. Pupils were small and unreactive. A CT scan showed no evidence of a hematoma. The patient's condition deteriorated to brain death and the respiratory was discontinued on the fifth postoperative day. At autopsy a massive infarction involving the brain stem, cerebellum and left posterior parietal and occipital lobes was found.

This case represents the hazards of managing patients with severe cerebrovascular disease. In an attempt to increase perfusion of the left hemisphere which was symptomatic, the EIAB was performed. In the postoperative period the remaining vertebral artery apparently occluded, producing massive brain stem infarction leading to the patient's demise.

DISCUSSION

The answer to cerebral arteriosclerotic disease will be prevention, possibly with the aid of dietary or blood pressure management; however, until this is forthcoming, certain patients will benefit from either removing or bypassing stenotic lesions causing cerebral ischemia. It is therefore imperative to completely evaluate patients with cerebral vascular disease in order to identify those who are surgical candidates. Obviously, if the general medical condition and age is such that surgical intervention would not be feasible, angiography is not indicated. In addition, patients who have suffered extensive infarction with irreversible brain damage do not warrant invasive studies.

Complications of EIAB are: skin flap necrosis, subdural hematoma, cerebral or cerebellum hemorrhage, infection, seizure disorders, and infarction. Yasargil and Yonekawa's series of 86 cases had three deaths.[4] Two were due to cerebellar hemorrhages and the third due to septacemia, secondary to skin flap infection. In addition, they had three postoperative subdural hematomas and five postoperative seizure disorders. The most common complication appears to be marginal skin flap necrosis, which is not usually a serious problem. Aggravation of preexisting cerebral ischemia usually does not occur since the anastomosis is carried out in a small cortical vessel that may be occluded for significant periods of time without causing tissue ischemia. Due to the possibility of major complications as exemplified by our case #3 EIAB should be recommended to only the most carefully selected patients.

At the present time, patients suspected of having cerebral vascular disease should have skull films to evaluate for evidence of increased intracranial pressure, abnormal calcifications, pineal shift and sella turcica size and configuration. One must remember that subdural hematomas, neoplasms, and other mass lesions can cause intermittent symptoms that may mimick cerebral vascular insufficiency. The nuclear brain scan with cerebral profusion studies is quite helpful in detecting major flow abnormalities and evaluating whether actual infarction has occurred. Computerized tomography can rule out a mass lesion and will provide information on tissue density that may change with ischemia without true infarction. Finally, cerebral angiography with its 1 to 3% morbidity is the only method to adequately define the cerebral vascular anatomy and should be carried out in all patients thought to be surgical candidates. Regional cerebral blood flow studies are being used in some centers to evaluate these patients pre- and postoperatively and should provide valuable information in the selection of surgical candidates in the future.

At the present time, patients with embolic disease, severe neurological deficits, significant medical problems, and without an adequate scalp artery are not considered candidates for EIAB. Those patients who have transient cerebral ischemic episodes or reversible ischemic neurological deficits with angiographic lesions not accessible to the usual vascular approaches should be considered candidates for EIAB. Medical treatment of these patients consists of medications to improve microcirculation, such as dipyridamole and aspirin.

Although preliminary data on EIAB appears promising the true value of the procedure is not known. For this reason a collaborative investigation has been launched by the National Institute of Neurological and Communicative Disorders and Stroke. It is planned to participate in this study once the criteria for inclusion have been achieved.

In the future noninvasive regional cerebral blood flow techniques should help better predict which patients might benefit from cerebral revascularization. In addition, techniques are being developed to allow the neurological surgeon safe access to larger cerebral vessels in order to augment the cerebral circulation.

Editor's Note:

Revascularization of the brain has been demonstrated to be feasible. The relative value of this type of procedure and of medical management in relation to future morbidity and mortality can be determined most efficiently by a randomized controlled study of the type that Dr. Carter wishes to be involved in. This study by a number of centers in the world deserves the support of medical profession and has the endorsement of the Society of Neurological Surgeons, the American Association of Neurological Surgeons Cerebrovascular Section, the support of the National Institute of Neurological and Communicative Diseases and Stroke, and of the BNI Committee.

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Obstetrics and Gynecology

Genital Herpes

Part I

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Introduction

Reviews of current literature strongly suggest that there has been a significant increase in the prevalence of genital herpes in the United States during the last ten years. Early opinion held that such cases were almost solely the result of herpes virus type II. However, more recent investigations indicate the herpres virus type I may be implicated in as many as 10% to 30% of the cases among younger patients.[1,2,5] It has been generally accepted that transmission of genital herpes is primarily venereal, although transmission of infection may occur between mother and child during the birth process, and, more rarely intrauterine infection may occur.

Important factors associated with genital herpes that demand consideration are: (1) It is presently considered incurable and can recur at any time following primary infection without further contact with an individual with active disease. (2) Disseminated neonatal infection can be devastating; death or severe neurological damage is the usual result. (3) Increased risk of cervical cancer exists for women following genital herpes infection.

Clinical Characteristics

The clinical features of genital herpes have been well

From: Arizona State University, Dept. Health Services, Tempe, AZ 85282.

documented in studies by Kaufman, *et al.*,[5] Chang, *et al.*,[3] and Tennican.[11] Infections range from subclinical to severe. The disease is usually much more severe and of longer duration with primary infections than with subsequent recurrent infection. Estimates of incubation periods range from two to twenty days, with six or seven days being average.[1] There is frequently a twenty-four hour period of perineal paresthesia and burning preceding the appearance of the small vesicular lesions that are the hallmark of herpes infections. The vesicles generally appear in clusters, but also may be discrete; they are one to five millimeters in diameter and contain an amber-colored fluid. The appearance of lesions is usually accompanied by systemic symptoms and signs which include headache, fever, and malaise. Severe pain and tenderness may persist until the lesions are completely healed. Enlarged, tender inguinal nodes are often present. Painful urination and urinary retention distress are not uncommon. When dysuria occurs it probably results from lesions in the urethra.

The most frequent site of lesions in both sexes is on the external genitalia. In severe cases, lesions in the female may involve the entire genital tract, including the cervix. When the ectocervix is the only site the disease may go undiagnosed because these lesions do not necessarily cause pain and the systemic components of this disease are indistinguishable from those of other viral infections. With extensive involvement, diffuse erythema and edema may accompany the appearance of the vesicles. Papule formation, ulceration of confluent vesicles, bullae formation, or a grayish membrane due to accumulation of epithelial debris occasionally occur. Probably the most protean area in terms of diagnosis is the cervix. Lesions here tend to be the least typical in appearance for they may be elevated, fungated, or necrotic. Primary infections characteristically last from three to six weeks while secondary infections are usually completely resolved within ten days of onset. Severity of infection with primary genital herpes is thought to be closely correlated with the patient's prior exposure (antibody titer) and to other forms of herpes - such as herpes infections of the face or mouth.[5] Regardless of severity, primary infections eventually exhibit complete healing. Tennican has stressed the occasional occurrence of neurological involvement, characterized by headache, nausea, photophobia, and "herpes meningitis." While he stresses that patients should be warned about the possibility of such complications, it should be noted that, as opposed to herpes I encephalitis, the prognosis in this instance is more often good.[11]

Another interesting clinical association is described by Scott.[9] He notes the occasional occurrence of necrotic stomatitis and erythema multiforme seven to ten days following herpes infections. Recurrent (secondary) infections are reported to be very common, yet exact data is not available concerning what percentage of individuals will have such recurrences. It has been established, however, that secondary infections tend to be less severe than primary infections.

Laboratory Diagnosis

The highest correlation between clinical impression and laboratory diagnosis when patients are seen early in the course or their disease can be obtained with cultures. The material obtained by scraping the base of the active vesicular lesions will yield at least 80% positive cultures. Direct smears are also beneficial, as differential staining techniques may be used to distinguish herpes type I from type II. Aurelian[1] states that in males the virus can be cultured from the urethra, prostate, and seminal fluid. Serology is of value in confirming prior exposure. There is frequently no rise in antibody titer following recurrent infections.

The chief reason for wanting to confirm clinical diagnosis occurs in pregnant patients close to term where decisions must be made regarding mode of delivery. The private physician can usually obtain supplies needed for culturing from state health laboratories as well as specific directions on collecting and handling specimens.* Preliminary culture results are usually reported back to the physician within seventy-two hours, and the viral agent, if present, can be typed within another seventy-two hours. Negative cultures are held for three or four weeks, as on rare occasions growth is delayed. The present cost of cultures is about twenty dollars.

Serologies are also available through state health laboratories. Paired sera are required, drawn at the time of acute illness, and then two to three weeks later. A rise in antibody titer is suggestive of primary infection, and therefore is at least theoretically of value in predicting how long the patient is liable to shed infective viral particles. This information may be of value related to preventive measures between sexual partners and in decision-making regarding caesarean section. The cost to the private physician for serologies is about $3.00 per run for each antigen check or paired sera.

Treatment

Currently there is no available curative treatment for genital herpes. Topical application of antiviral agents has, to date, not shown any significant difference in the duration of lesions if consideration is taken as to whether the infection is primary or secondary. Everything from damp teabags to Betadine has been suggested for application to the vesicles. Any drying agent with anesthetic properties may yield some temporary relief. Oral analgesics are frequently indicated for the relief of pain and fever. While adenine arabinoside has recently been shown to be of benefit in the treatment of herpes encephalitis,[12] experimental studies to date have not confirmed its usefulness in the treatment of genital herpes.

Since genital herpes has recently become a very active area of investigation, there is promise that improved treatment for it may be forthcoming.

(*TO BE CONCLUDED*)

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* In Arizona, the Bureau of Epidemiology and Laboratory Services at 1520 West Adams Street, Phoenix, Arizona 85007, performs both viral cultures and serologies.

Oncology

Neurosurgical Treatment of Pain from Cancer

Philip R. Weinstein, M.D.

Editors:
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Robert H. Thoeny, M.D.

Mechanism of Cancer — Related Pain

"Pain" is defined as an unpleasant or noxious sensation experienced in varying degrees of intensity which, under ordinary circumstances, serves to warn of impending tissue damage. Extremes of temperature, pressure, and mechanical distortion, as well as severe ischemia and inflammation due to infection or neoplasia, can cause excruciating pain which serves to initiate corrective behavior or leads to appropriate medical therapy. Acute pain due to such disorders as burns, peritonitis, or ureterolithiasis is associated with fear, agitation, and obvious autonomic responses of diaphoresis, tachypnea, and tachycardia. It is usually relieved rapidly by treatment of the pathological process. Chronic pain is due to irreversible tissue damage such as that seen in degenerative skeletal or central nervous system disorders or incurable cancer. It may be equally as severe as acute pain but is associated with anxiety, depression, and a striking absence of the grimacing, writhing, or autonomic response of acute pain.

Acute cancer pain is frequently associated with malignant processes which can be treated directly, such as intestinal obstruction or pathological fracture. Chronic cancer pain may be due to primary or metastatic neoplastic involvement of visceral, skeletal, or neural structures. Mechanisms include stimulation of sensory receptors or nerve fibers by stretching or pressure applied to such pain sensitive membranes as periosteum and peritoneum or by direct compression of nerves such as that which occurs with pelvic neoplasms which impinge upon the lumbo-sacral plexus.

Pain due to malignancy can be classified and described according to its character and location, so that its mechanism can be identified and an appropriate form of neurosurgical treatment selected. Thus, cancer pain can be of **somatic, vascular,** visceral, or **central nervous system** origin.

Somatic pain is sharp, well-localized, surface pain. It involves the extremities, spine, or chest and abdominal walls, and is aggravated by movement and relieved by rest. It is mediated by sensory fibers in peripheral nerves or nerve roots. One example is chest wall pain due to compression of an intercostal nerve or infiltration of surrounding periosteum and muscle by a rib metastasis which is completely relieved by diagnostic intercostal nerve or spinal root blocks. Spinal root section (rhizotomy), when involvement is close to the midline or spinal column, or peripheral neurectomy are effective in controlling this type of pain.

Vascular pain, like causalgia, is a constant burning surface pain in the extremities that is aggravated by touching the skin over the involved part (dysesthesia) and associated with trophic skin changes due to sympathetic nerve dysfunction.

Visceral pain is deep, poorly localized, constant aching or burning pain experienced within the thoracic, abdominal, or pelvic cavities. Visceral sensation is mediated by small-diameter, unmyelinated nerve fibers which travel with autonomic nerves. Often the most agonizing type of pain such as that due to carcinoma of the pancreas can be dramatically alleviated by percutaneous infiltration of the lumbar paravertebral celiac ganglion with local anesthetic or neurolytic agents. Similarly, cervical paravertebral stellate ganglion blocks may relieve pain due to pulmonary or mediastinal malignancy.

Central pain syndromes, such as phantom limb pain after amputation for sarcoma or paraplegic pain after spinal cord infarction due to compression by a vertebral metastasis, are characterized as painful anesthesia or pain experienced centrally in the absence of sensory input from the affected part. Denervation pain syndromes are the most difficult to treat neurosurgically and usually require implantation of spinal cord or thalamic neurostimulation devices for activation of inhibitory sensory mechanisms to counteract central imbalance created by the offending lesion.

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Criteria for Surgical Intervention

The criteria for neurosurgical intervention in the treatment of cancer pain must be considered in accordance with the patient's life expectancy, the extent of functional impairment, and the individual's capacity to withstand surgery and general anesthesia, if required. In a review of the management of pain in terminal cancer cases recently published in this journal, Farr described achievement of effective analgesia with oral administration of morphine compounds.[1] A thorough trial of orally administered analgesics should indicate whether or not cancer pain can be adequately controlled without an intolerable degree of sedation, mental impairment, or unpleasant side effects such as nausea and vomiting. Parenteral administration of narcotics should not be required for outpatient management.

Often, cancer pain can be controlled medically when the patient is kept at rest, but severe pain is experienced with movement or ambulation. In a patient who is not bedridden by dyspnea or weakness due to cachexia, a surgical pain-relieving procedure may markedly improve functional capacity and quality of life. The importance of a patient's ability to concentrate, think, and enjoy normal emotional responses cannot be overemphasized, and the return of this capacity is greatly appreciated when relief of sedation from analgesics or anxiety from pain follows surgical treatment. Certain types of well-localized somatic or visceral pain are suitable for treatment by relatively safe percutaneous neuroablative procedures under local anesthesia. On the other hand, patients with diffuse skeletal or visceral metastases who already have or soon will have widespread or multiple pain sites will respond only to more complex forms of stereotactic brain surgery with attendant higher degrees of risk.

Metastatic Involvement of the CNS

Cranial or spinal pain can be the initial symptom of either primary or systemic malignancy, but it is more frequently a late manifestation of widespread involvement. For example, complaints of severe headache or back pain may lead to a diagnosis of an asymptomatic primary carcinoma of the lung which has already metastasized to the brain or spinal column. Relief of pain and prevention of progressive and incapacitating neurological deficit such as aphasia and hemiparesis or paraplegia may require neurosurgical decompression or removal of the lesion if the patient's condition and life expectancy warrant such intervention.

Radiation therapy may supplement surgical treatment or it may be substituted when the presence of multiple extensive, inaccessible, or otherwise inoperable lesions makes craniotomy or laminectomy inadvisable. Although rapidly progressive paraplegia due to spinal cord compression by myeloma, lymphoma, and radiosensitive metastatic carcinoma should be treated with emergency surgical decompression followed by radiation, patients presenting with severe pain alone or a minimal nonprogressive neurological deficit are best treated with radiation therapy alone.[3]

Spinal pain due to nerve root compression by intravertebral neoplastic growth should respond well to radiation. However, pain due to pathological fracture with resultant spinal instability may not respond. External immobilization with a collar, corset, brace, or plastic body jacket may provide significant pain relief. Dissolution of one or more cervical vertebral bodies by malignant tumor may require operative stabilization for pain control, as well as prevention of spinal cord compression due to progressive subluxation. Although standard techniques of arthrodesis with autogenous bone grafts are not successful in this setting, excision of the involved vertebral bodies by the anterior approach followed by replacement and fusion with acrylic cement has been successful in cervical spine lesions. Such procedures are advisable, especially in patients with well-controlled malignancies such as multiple myeloma, where life expectancy may be considerable.

Neuroablative Procedures for Pain

Short-term pain relief (6 weeks to 6 months) can often be obtained with ablative operations designed to interrupt afferent pain pathways in the peripheral nervous system. However, because of cancer spread, regeneration of peripheral nerves, or redundancy of collateral nerve supply and central pathways, pain relief after section of peripheral sensory nerves (neurectomy) or spinal roots (rhizotomy) may be incomplete or transient. Preliminary diagnostic spinal or peripheral blocks with local anesthetic are invaluable aids in defining the anatomy of a given patient's pain and in predicting response to neuroablative procedures.[6] Detailed analysis of the location, mechanism and afferent pathways involved is required in order to select the most appropriate form of surgical pain therapy.

Neurolytic agents such as absolute alcohol can be injected percutaneously under x-ray control. Destruction of nerve tissue, which occurs by dehydration and sclerosis is difficult to control and usually ablates all sensory modalities, as well as any motor fibers in the nerve. The fact that most pain-conducting fibers are of the unmyelinated or small-diameter, thinly myelinated types can be exploited by using selective neurolytic agents such as ammonium sulfate or hypertonic (3%) saline in order to spare the less vulnerable larger diameter, heavily myelinated touch and motor fibers.

Radiofrequency current passed through a needle electrode can also be used to deliver heat for selective thermocoagulation of small pain fibers. This technique offers the advantages of prior electrical stimulation for localization and accurately controlled ablation with monitoring of electrode current and temperature during sequential graded lesioning guided by the patient's intraoperative report of pain relief and onset of numbness.[7] With radiographically controlled percutaneous needle placement, this technique can be used for spinal or trigeminal rhizotomy, sparing the patient laminectomy or craniotomy for surgical exposure of the ganglia or roots to be ablated.

In general, more effective and longer lasting pain relief can be expected from ablative procedures placed more centrally in the pre-ganglionic roots of the spinal cord (spinothalamic tractotomy) and (less frequently) in the brain stem (medullary or mesencephalic tractotomy). Stereotactic thalamic lesions (thalamotomy) have been utilized in the postero-ventral-lateral or medial sensory nuclei or in the para-fasicular and centrum medianum reticular formation association nuclei with only limited success. Placement of bilateral lesions in the dorsal thalamic nuclei, cingulum, or frontal lobes for relief of anxiety and emotional response to cancer pain is no longer advised since medical therapy is usually adequate for this purpose.

Perhaps the most useful single ablative neurosurgical procedure for the treatment of cancer pain is the percutaneous cordotomy. The spinothalamic tract which carries crossed somatic pain- and temperature-localizing fibers from the contralateral limbs and torso can be safely penetrated with a needle electrode under radiographic control through the C1-2 interlaminar space. With the patient under local anesthesia, a 20- or 22-gauge spinal needle is placed just below the tip of the mastoid process. After the dura and arachnoid have been punctured and cerebrospinal fluid obtained, Pantopaque® (iophendylate) is injected as a contrast material in order to outline the dentate ligament radiographically. The anterolateral quadrant of the cervical cord can then be penetrated with a fine, insulated wire electrode and stimulation carried out to verify appropriate placement. A relatively consistent fiber orientation is found in the spinothalamic tract: sacral and lumbar segments are found laterally, while thoracic and cervical fibers are located anteromedially. It is often possible to provide selective analgesia over either the contralateral upper or lower extremity and surrounding torso with a small lesion placed in the appropriate segment of the spinothalamic tract. For example, pain in the flank, buttock, and leg due to renal carcinoma with retroperitoneal spread can be abolished with a series of small lesions begun with lateral electrode placement and enlarged by advancing 1-1.5 mm medially, bringing the level of analgesia as tested intraoperatively up to the mid-thoracic region, but sparing the upper extremity. Immediate relief of both constant and activity-induced pain can be expected, and patients who were completely immobilized by pain pre-operatively can undergo full range-of-extremity movement without pain on the operating table after lesioning is completed. Some of these patients may become fully ambulatory on the first postoperative day. Except for thermal localization, no useful sensory modality other than pain is lost after spinothalmic tractotomy, and visceral sensation is usually preserved.[9] Satisfactory results can be expected in 80%-90% of patients with intractable cancer pain.[2,9]

Patients who are unable to remain in the supine position because of dyspnea, but who have a baseline pO_2 over 60 mm Hg, can be managed with "awake" intubation under local anesthesia for respiratory assist during cordotomy. Patients who cannot tolerate the supine position because of severe pain can usually be adequately managed by the anesthesiologist with short-acting narcotics such as intravenous Sublimaze® (fentanyl proprionanilide) and small doses of sedatives (eg., droperidol) so that the ability to give verbal reports of response to stimulation and lesioning is maintained. One limitation of cordotomy for cancer pain is the occasional lack of response of midline spinal or sacral pain due to bilateral (crossed and uncrossed) ascent of fibers from the dorsal rami which enervate spinal and para-spinous structures. Staged bilateral cordotomies may be necessary in this setting or when relief of excruciating pain predominantly lateralized to one side unmasks moderately severe pain on the opposite side which the patient had not previously been aware of.

Complications of cordotomy can be expected in up to 10% of patients. These include unpleasant or painful dysesthesias in the analgesic area, urinary incontinence, ipsilateral leg weakness (due to corticospinal tract injury), and impairment of respiratory function, especially after bilateral lesions in the vicinity of the cervical cord origins of the phrenic nerve and cervical plexus. Most complications are transient, resolving as postoperative edema of surrounding cord structures subsides. Sleep-induced apnea ("Ondine's curse") is a potentially dangerous, but usually transient, complication of bilateral cordotomies which requires careful postoperative monitoring for 24-48 hours after surgery. Pressure ulcers of the skin may develop over analgesic areas, and special care must be taken to avoid skin burns, punctures, or lacerations due to unnoticed injury.

Neurostimulation for Pain

Recent research in sensory physiology has led to the use of cutaneous and peripheral nerve stimulation through skin electrodes, as well as implanted spinal cord and thalamic stimulation devices for pain relief. Activation of peripheral pain inhibitory systems electrically may produce counter-irritant effects similar to pain relief experienced after the use of massage, vibrators, ultrasound, and heat or cold applications. Cutaneous nerve stimulators may provide significant relief without surgery, especially in patients with pain localized to the distribution of accessible peripheral nerves. Thalamic stimulation in the peri-ventricular gray area is thought to relieve pain by activation of powerful reticulospinal descending pain-inhibitory systems.[5] Of interest, is the fact that binding sites for endogenous morphine-like substances (endorphins) are found in this region, and that opiate antagonists such as naloxone are observed to block stimulation-produced analgesia. After unilateral stereotactic implantation of depth electrodes, brief periods of stimulation may result in hours of relief from diffuse bilateral cancer pain. However, such radical intervention is rarely indicated when life expectancy is short. Dorsal column stimulation is thought to activate ascending inhibitory pathways with relays in the midbrain, but a satisfactory explanation for its central action is not yet available. Unfortunately, significant relief of visceral, perineal,

TABLE I
NEUROSURGICAL TREATMENT OF CANCER PAIN

LOCATION	TYPE	BLOCK	TREATMENT
Extremity	Somatic	Spinal roots or plexus.	Percutaneous cordotomy or rhizotomy.
Extremity	Sympathetic	Stellate or lumbar paravertebral	Neurolytic sympathectomy (alcohol injection).
Perineal	Somatic and sympathetic	Spinal roots, intrathecal spinal, and lumbar paravertebral	Sacral rhizotomy or myelotomy. Intrathecal phenol. Neurolytic sympathectomy.
Pelvic	Somatic or visceral	Intrathecal spinal and lumbar paravertebral	Bilateral cordotomy if lateralized. Neurolytic sympathectomy
Abdominal	Somatic or visceral	Intrathecal spinal and celiac plexus	Cordotomy if lateralized. Neurolytic sympathectomy.
Thoracic	Somatic or visceral	Intercostal nerves, spinal roots, and stellate or thoracic paravertebral.	Cordotomy if somatic. Neurolytic sympathectomy.
Head and neck	Mixed	Trigeminal roots	Trigeminal rhizotomy. Medullary or mesencephalic tractotomy. Thalamic stimulation
Diffuse and spinal	Mixed	————	Hypophysectomy. Thalamic stimulation. Bilateral cordotomy.

or midline cancer pain has not been obtained with this procedure.

Hypophysectomy

Patients with metastatic carcinoma of the breast or prostate often develop severe diffuse pain due to widespread skeletal metastases. If evidence of previous response to endocrine manipulation such as castration or suppressive hormonal therapy is available, pituitary ablation may provide significant palliation and pain relief. When estrogen receptor protein assay of biopsied tissue is positive in premenopausal breast cancer patients, a 70%-80% response rate for hypophysectomy can be expected.[4] There is no screening test available for prostatic cancer at present, but previous response to orchiectomy and stilbesterol treatment is a useful guide in selecting patients. Pituitary ablation may be accomplished stereotactically under local anesthesia with a trans-nasal cryogenic probe which perforates the sphenoid sinus and sella turcica.[8] Complete removal of the adenohypophysis with sparing of the stalk and posterior pituitary in order to prevent diabetes insipidus can also be accomplished by the open trans-sphenoidal microsurgical technique, with up to 80% satisfactory results and 5% morbidity rate.[4] Beneficial effects of hypophysectomy may be due to elimination of prolactin and growth hormone effects on tumor growth. Elimination of adrenocorticotrophic hormone secretion acts by reducing adrenal estrogen or androgen production. A role for the pituitary in regulation of endorphin production has also been postulated, and pain relief after hypophysectomy for unresponsive or non-endocrine tumors has been observed.

Cancer Pain Syndromes and Selection of Procedures for Pain Relief

Cancer pain syndromes can be analyzed according to the regions involved (see Table I). Somatic arm and shoulder or leg and hip pain is effectively controlled with spinothalamic tractotomy (cordotomy). Neurolytic sympathetic blocks will often relieve burning causalgia-like pain.

Perineal pain and pelvic pain present special problems since both somatic and visceral components, as well as midline pain, are present. In one of our recent cases of predominantly lateralized somatic pain due to invasive rectal carcinoma, cordotomy was successful. The patient had been unable to sit, walk, or lie on the painful side preoperatively and was completely relieved by percutaneous cordotomy (except for mild pelvic pain on the opposite side which was adequately controlled with oral analgesics). However, most cases are more difficult to treat. When bowel and bladder function have already been affected completely by the disease, intrathecal phenol injection may suffice. Otherwise, laminectomy for selective sacral rhizotomy or commissural myelotomy may be required. Bilateral cordotomy may be effective for pelvic or buttock pain, but results have been disappointing for midline perineal pain.

Abdominal and chest pain can be managed as indicated in Table I according to predominance of somatic or visceral components. Severe back and epigastric pain due to invasive gastric carcinoma can be effectively controlled with a celiac plexus alcohol block. Loss of afferent visceral enervation may mask later intestinal obstruction or peritonitis, but may offer significant palliation of pain. Patients with carcinoma of the lung may be effectively relieved of constant deep burning visceral chest pain that is unrelated to movement or respiration by neurolytic stellate ganglion block. Ventilation and capacity for activity may be greatly improved by relief of somatic chest wall pain with intercostal nerve blocks, thoracic radiofrequency rhizotomy, or cordotomy.

Invasive head and neck cancer may cause pain in the face and throat region that is so severe that swallowing becomes impossible. Trigeminal radiofrequency rhizotomy can be performed percutaneously through the foramen ovale, but this will not relieve pain in the VIIth, IXth, and Xth nerve distributions. Stereotactic medullary or mesencephalic tractotomy can relieve unilateral pain, but thalamic stimulation would be required for treatment of bilateral pain. Posterior fossa craniectomy for cranial rhizotomy should no longer be necessary in this setting.

SUMMARY

Intractable cancer-related pain can often be effectively treated with neurosurgical procedures which are performed under local anesthesia and which are associated with little additional risk or discomfort for the patient. Accurate diagnostic localization of the pain is required for selection of the appropriate operation and prediction of clinical response. When major surgical intervention would be required for pain control, medical analgesic therapy is always preferable as long as it is effective, unless side effects are intolerable or life expectancy is considerable.

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Psychiatric Disorders

Instincts and the Future of Psychiatry

William B. McGrath, M.D.

Q. *What about the future of psychiatry?*

A. There will surely be a new classification of diseases and it will be based on much more scientific theorizing.

Q. *Are current theories not scientific?*

A. Mostly they are not. The Oedipus complex, the id, the psychological and behavioral explanations of depression or psychophysiological disorders are all unscientific because, as theories, they cannot really be tested, cannot be falsified.

Q. *Why do you use the negative, falsified, instead of confirmed or proven?*

A. Innumerable positive instances (induction) give no guarantee that the next ones might not be the opposite. One falsification of a theory or hypothesis says flatly, start over.

Q. *Where would you look for new and more scientific theories?*

A. In the instincts, first acknowledging them — which we haven't — and then studying the biological forces which mediate them.

Q. *Why have the instincts been overlooked, neglected?*

A. Partly because of religious traditions. We have tried to convince ourselves that our needs and drives are not like those of humbler creatures. Secondly, the human instincts could not be observed in isolation from the environment. Hence the concept or term was hardly operational. Only in recent years has there been dawning knowledge of the biochemistry and biology of instincts (hormones, catacholamines, etc.).

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Q. *Does man not have free will?*

A. Yes; but within obvious limits. But so do other animals. They learn by trial and error, as we do, and in their worlds they make hundreds of choices every day: whether to freeze or attack or run away; with whom to court and mate; where to build the home.

Q. *You used the negative again: by trial and error. Why?*

A. There is ancestral wisdom in the phrase, by trial and error. We can never be sure of inductive reasoning. It is open-ended, and we simply cannot finish counting toward proof instead of probability. We learn mostly by mistakes and try not to repeat them.

Q. *How do you define instinct?*

A. Dictionary definitions are partly in error. They speak of instincts as unconscious, which often they are not. Every creature, including man, comes into the world with a fund of knowledge to help him and his kind to survive and reproduce. The knowledge is marvelously complex but pre-verbal, of course, and incomplete.

Q. *Incomplete?*

A. Yes; the loops are not closed until there are transactions with the environment; i.e. experiences.

Q. *Will you further define the term, instinct?*

A. The inborn knowledge is fused with special forces to put itself to use. The forces themselves have not yet been studied or even discovered. "Who can measure the spider's determination to spin and repair his web?" (That's from our first book, Mental Fitness). The invisible bonding of the herd or the human society antedates social learning, else socialization would never have occurred.

Q. *Please discuss the inborn fund of knowledge.*

A. Well, one can see it everywhere in the behavior of animals, birds, insects. There was a recent documentary on the castle-building termites of Africa. Somehow, in the invisible netting of society, the bloated queen "knows" and transmits the relative requirement of fewer workers or more soldiers or mates. (The insects, hurrying to and from her chamber do look like civil servants at the White House).

Q. *How does the termite's exchange of information occur and become implemented?*

A. This is still not known. Any instinct can be viewed as a kind of expectation of the environment. An expectation, like an hypothesis, awaits testing — again by trial and error.

Q. *In the human being, how many instincts are there?*

A. We do not know because we have tried either to ignore them or to call them by misleading names: unconscious drives and prohibitions, complexes, conditioned reflexes. (By strict definition a reflex cannot be conditioned; witness the knee jerk).

Q. *Are human instincts different from those of other creatures?*

A. Broadly speaking, probably not. However instincts are specific; i.e., unique to each species. And, of course, man appears to be more self conscious and complicated than the bird or animal or fish or insect.

Q. *Will you list some of man's patterns of behavior which have their origins in instincts?*

A. All behavior patterns, in my opinion, are first determined by instincts and then modified by experience.

Instincts themselves are not essentially changed or destroyed by external forces. We'll list a few instincts which are readily recognized:

1. Courtship and mating (infinitely more beautiful and elaborate than the narrow concept of sex instinct).
2. Nest building (modern condominiums and office buildings look like beehives).
3. Care and training of young and setting them free.
4. Territorial claims (by scent or song or otherwise).
5. Curiosity, exploration, testing, inventiveness.
6. Cooperation and willingness to sacrifice (sentinel quail).
7. Socialization in general (herding, governance, etc.).
8. Preening and mutual grooming.
9. Food gathering and storage and sharing.
10. Response to rhyme, rhythm, cadence.
11. Play as rehearsal for adult functioning.
12. Others (migration? barter? homage? privacy?).

Q. *With what relative conditions do the instincts vary?*

A. 1. Racial learning from the beginning of time.
2. Individual learning from the beginning of life.
3. Nutrition, endocrine status, general health.
4. Climate and all environmental cycles.
5. Age and specific "bio-rhythms" of the individual.
6. Opportunity or environmental invitation.
7. Other.

Q. *What might psychiatry do with such information?*

A. We might finally learn the origins of human behavior. And, as mentioned, we could devise a more scientific (testable) classification of psychiatric disorders.

Q. *Will you explain?*

A. The so-called functional disorders are those for which the etiologies are still obscure, unproven, unsought. They are meaninglessly divided according to what appear to be their most distinguishing symptoms.

a. Thought Disorders; e.g. schizophrenia.
b. Affective Disorders; e.g., depressions and manias.
c. Neuroses; i.e. symbolic expressions of conflict.
d. Behavior Disorders; e.g., delinquency, crime, sociopathies, addictions, perversions.

Surely a number of psychiatric illnesses have their sources in defects or impairments of the instincts. Schizophrenia, for a glaring example, cannot be explained in psychological terms. In this disease so many of the basic instincts are lacking or lost! One wonders about child or wife abuse in light of the natural instincts of caring and mating. Some cases of homosexuality and antisocial behavior are probably misnamed "constitutional". You see, we are not referring to individual heredity (nor to the astral speculations of Jung). We are thinking of instincts common to the entire species but subject to diseases about which we have only begun to inquire.

Q. *Are there more immediate applications or tests of such theories?*

A. Yes; if we can overcome our apathetic resistance. We need to clasp the premise that human behavior is instinctive and not qualitatively otherwise. Then we could begin to use our extensive knowledge of animal behaviors and their modifications. A number of psychiatric illnesses could be classified and paired opposite the instincts involved. As a result, we might put far less emphasis on trying to change the ailing or errant individual. Then, (individually not sociologically) we could survey those environmental conditions which might gratify his natural instincts instead of blocking or deviating them. Given a healthy animal instinct and the appropriate circumstances (which often can be created!) almost any human will function toward his own good and that of his fellows or the species. Given a defective instinct no psychotherapy and no environmental change will likely be of benefit.

Q. *What will happen to the psychiatrist as we know him?*

A. He will probably delegate or relinquish to social workers and psychologists and educators those interpersonal and environmental concerns which can be addressed without a medical degree. The psychiatrist will turn his attention to the instincts and to the strange energy systems which serve or fail them.

Q. *What next?*

A. Next is to discover the chemical, hormonal or other force of each instinct so that it can be regulated. Already acknowledged is the influence of some hormones on attitudes and behavior. My guess, however, is that we'll be dealing with an entirely new concept, like the half-life of carbon. Somehow we must learn to measure, for example, the cohesiveness of a family or group or the strength of simple curiosity. This would be no easier and no harder than the development of nuclear fission and fusion.

Q. *How does all this affect one's religious beliefs?*

A. There is nothing about a scientific study of the creature, man, which could be construed as threatening to alienate him from his Creator. On the contrary, when we appreciate the wonder of instincts we may be kinder to ourselves and others and we'll surely learn humility and awe.

Radiology

Radiology Case of the Month #33

Cary J. Stegman, M.D.
Jonathan M. Levy, M.D.

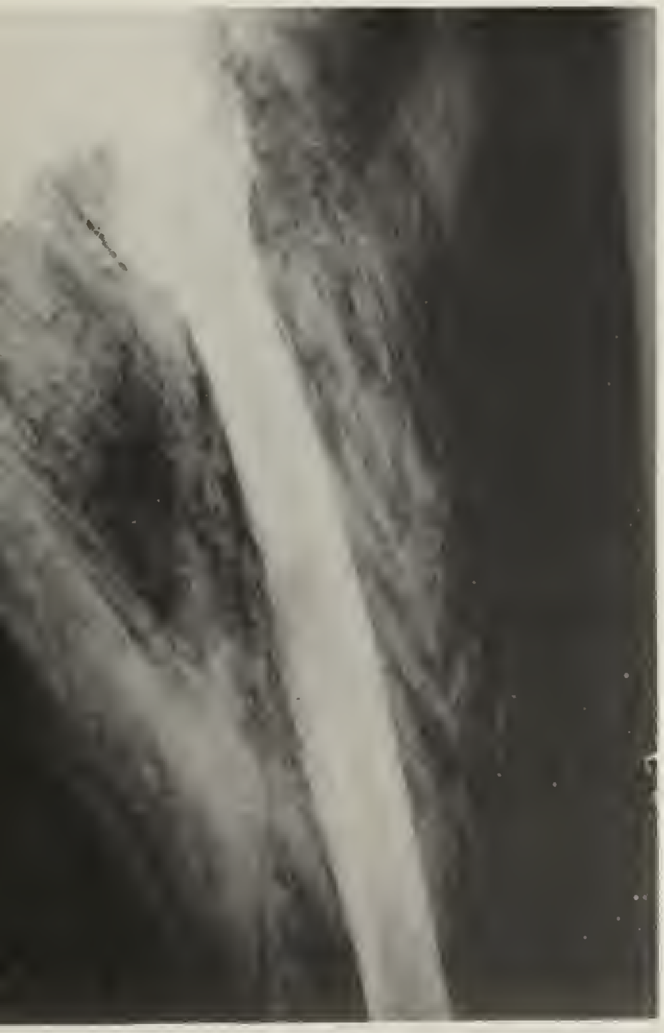

FIGURE I

A 65 year old man was seen in the Emergency Room, complaining of a swollen, painful right leg. An x-ray of his right thigh (Fig. 1) showed an abnormal soft tissue pattern.

What causes the soft tissue abnormality shown?

What is the diagnosis?

From: The Department of Diagnostic Radiology, Scottsdale Memorial Hospital, 7400 E. Osborn Road, Scottsdale, AZ 85251.

Gas Gangrene

The etiology of soft tissue emphysema of an extremity (Fig. 1) may be mechanical, chemical or infective. When associated with infection, it has varying clinical significance. The natural history of gas forming infection can be accurately related to whether emphysematous cellulitis or myositis is present. Analysis of gas distribution on radiographs is most important in this categorization.

Emphysematous cellulitis is caused by Clostridial organisms as well as E. coli, Aerobacter aerogenes, anaerobic streptococci, and Bacteroides strains. This form of infection has a benign clinical course with minimal systemic toxicity, and little pain at the infected site. Radiographs show many small gas bubbles producing a "honeycombed" pattern subcutaneously. Conglomeration of the air bubbles may produce prominent collections under the skin and about the muscular planes.

Emphysematous myositis is indicative of anaerobic myonecrosis — commonly referred to as gas gangrene. Exquisite pain over the infected site, toxemia, shock and, not infrequently death, are the usual course. The best chance for survival depends upon early diagnosis and treatment. Soft tissue gas distribution associated with myonecrosis presents a characteristic pattern, evidenced by linear striations outlining muscle bundles, which terminate at the muscular margin. Contiguous intramuscular gas collections produce a "herring-bone" or "feather-like" appearance. This is the appearance seen in our patient. The organism most frequently associated with anaerobic myonecrosis is Clostridia perfringens. Other Clostridial species, e.g. C. novyi and C. septicum, have also been implicated. Non-Clostridial organisms (especially the anaerobic streptococci) may produce radiographic patterns indistinguishable from Clostridial gas gangrene. Treatment includes careful attention to fluid maintenance and acid-base balance, appropriate antibiotic therapy, and debridement. Hyperbaric oxygen significantly reduces systemic toxicity, while enhancing tolerance to surgical manipulation. Efficacy of therapy is greatly improved by early diagnosis, which may depend on the radiographic detection of intramuscular gas indicating anaerobic myonecrosis — gas gangrene. It is essential to distinguish between emphysematous cellutis and myositis in order to avoid unnecessary debridement and amputation.

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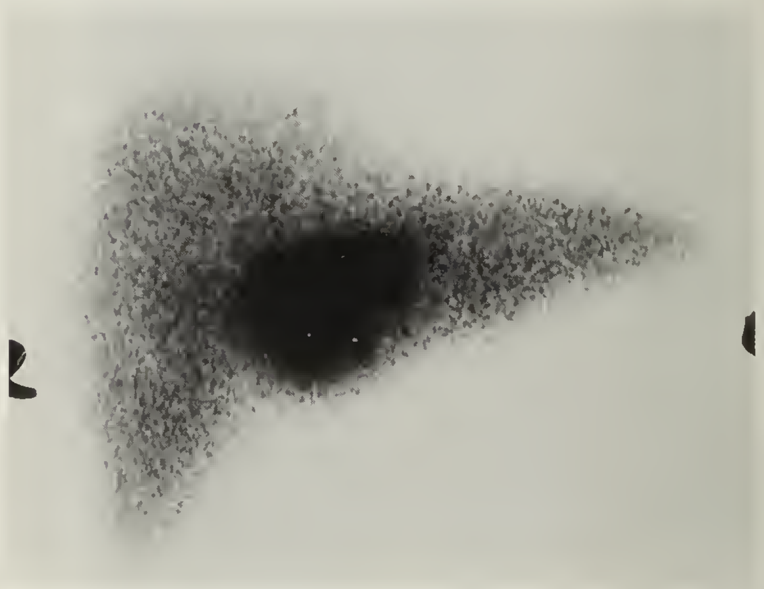
ERRATA



Radiology Case of the Month #29, March 1978, Vol. 35, No. 3 page 185, authors: Frederic C. Park, III, M.D., John C. Bjelland, M.D., Dennis D. Patton, M.D. and Duayne T. Hutchinson, M.D. The first figure was incorrect and should have been as is shown above. The diagnosis of the case was "Hot Spot" Detected on 99mTc Sulfur Colloid Liver Scan Due to Superior Vena Caval Obstruction.

Special Articles

Medicine in Mexico

XI. Nutrition

Charles C. Daschbach
Kenneth E. Green

In the fall of 1976, the Mexican National Institute of Nutrition announced that 85 percent of the republic's available food resources are consumed by 18 percent of the population. While these figures reflect profound economic and social inequities, it is in the area of health that their consequences are most devastating. With an estimated 60 percent of the nation considered undernourished, the contribution of nutritional deficiencies to Mexican morbidity and mortality figures is grossly underestimated by medical statisticians and commonly overlooked by health care personnel. It is largely through the efforts of the National Institute of Nutrition that a realistic focus has been brought upon the true extent of malnutrition in Mexico.

Most nutritional surveys have considered the lower socio-economic groups recently migrated to periurban areas and those from traditional rural villages in the Central and Southern regions. While the urban diet is more varied, some generalizations can be safely made concerning these two groups. The average daily protein intake in the shanty towns of Mexico City is 17 percent higher than most rural areas, but both are well below the national average and both have similar food consumption practices.

The Mexican dietary pattern of today resembles that of the indegenous tribes of 1,000 years ago, affected only moderately by three centuries of Spanish influence. The diet of one third of the Mexican population closely follows the habits of the ancestral Central Americans, with corn and beans supplying 60 to 80 percent of their calories. Another half of the population have a more mixed diet, including bread, rice, milk, eggs and some meat, while the diet of the remaining urban upper class is not unlike that of most industrialized nations.

As tortillas, posole, soups, atole and tamales, corn serves as the principal contribution to the energy requirements of the Mexican people. Beans or frijoles usually complement each meal with sporadic but adequate amounts of vegetables and fruits. Meat is not a favorite main dish and its contribution to total protein intake ranges from 15 to 30 percent. Among the dairy products, cheese is frequently added to all dishes with milk and eggs less popular. The consumption of beverages of all types play a considerable role in the diet. Mexico currently leads the world in per capita consumption of soft drinks, and while estimates of alcoholism vary considerably, cirrhosis of the liver is currently the 8th leading cause of mortality among all ages.

The most prevalent nutritional disease state is protein-calorie malnutrition (PCM), and as in all developing nations, children are the most overtly affected group. Recent government surveys among rural pre-school children estimate that over 55 percent are underweight: 42 percent suffering from primary PCM (10-25 percent below theoretical weight), 11 percent with secondary PCM (25-40 percent underweight) and 2 percent with tertiary PCM (more than 40 percent underweight). While both marasmic and kwashiorkoric forms of malnutrition are found, general nutritional growth failure is the most common manifestation.

The obvious contribution of these figures to an official infant mortality rate of over 60 per 1000 live births is underscored by the simple infectious diseases which lead both infant and preschool mortality: influenza, gastroenteritis, whooping cough and measles. Normochromic, normocytic anaemias are almost always present in these children and is exacerbated by concomitant intestinal parasites that deprive the child of folic acid and iron. Added to this picture is poor maternal nutrition with 12-15 percent of all Mexican birthweights below 2500 gm, and a predominant lack of simple health education with most mothers not understanding that a malnourished child will have a poor response to his mother's milk. The triad of poverty, ignorance and malnutrition is complex and difficult to alter without a considerable commitment from the government or economic sector.

A short article on nutrition in a country cannot accurately present the myriad factors of nutritional disease, nor can it give credit to all those health workers who labor against malnutrition. It can demonstrate that nutrition is an integral aspect of the health spectrum of a nation, from infant mortality rates to the everyday life of a family as it sits down to a meal.

From medical students at the Autonomous University of Guadalajara. Address reprint requests to Mr. Daschbach, 1101 S. Lehigh Drive, Tucson, AZ 85710.

Interesting Foods to Help Patients Follow Diet

Raymond C. Pogge, M.D.

The standard anti-diabetes Exchange Diets are also helpful in the treatment of obesity problems. For most unpregnant female obese patients, I prescribe the 1200 calorie diet. For males and pregnant females, I usually prescribe the 1500 calorie diet. In order that the obese patient can eat the same food as the rest of the family, I have found it helpful to calculate the exchange units for various special foods.

In my practice in Casa Grande, I treat a substantial number of Mexican-Americans. Even those of us who do not have a Mexican heritage have become fond of some of the delicious specialties developed by our Mexican friends. My first modification of the standard diet made it possible to include these foods. The most popular are listed in "Exchange Units for Mexican Foods."

Diets are not very effective unless the patient is willing and able to follow instructions. The addition of Mexican specialties made the Exchange Diet so popular that I have tabulated supplementary information on various types of food characteristic of other ethnic groups.

The exchange units for most other cream pies will be about equivalent to those for lemon cream; and for most fruit pies they will be similar to those for apple pie.

I have also found it helpful to make some minor changes in the Daily Menu Guide for lunch and dinner. These are particularly helpful for patients who like Mexican food, since the popular specialties usually are equivalent to one unit each of the bread, meat and fat.

The suggestions listed have gone far toward helping my obese and diabetic patients eat regular food. The most important things which I ask them to avoid are sugar, regular cokes, other soft drinks and pop, jams and jellies. They are allowed to have sugar substitutes as well as diet cokes and soft drinks which actually taste pretty good after one gets used to them. I warn patients about foods that have a slightly reduced sugar content and bear the "dietetic" label. So far, I haven't figured out how to suggest a satisfactory substitute for jellies, jams, or candy. When special patients like unusual foods, it is usually possible — with a little ingenuity, and possibly your wife's favorite cookbook — to calculate the equivalent exchange units. With a diet that the patient can follow, life is not only happier for the patient but also for the doctor.

EXCHANGE UNITS FOR MEXICAN FOODS

Item	Quantity	Units
Taco	1	1 bread 1 fat - 1 meat
Enchilada	1 (meat or cheese)	1 bread 1 fat - 1 meat
Tamales	1	1 bread 1 meat 1 fat
Burritos (Tortilla with refried beans)	1	1 bread 1 meat 1 fat
Fried rice	1 cup	2 bread 2 fat
Fried chix	2 oz.	2 meat 2 fat
Chile Rellenos	1	Veg. A 2 meat 1 meat 1 fat

EXCHANGE UNITS FOR ITALIAN FOODS

Item	Quantity**	Units
Spaghetti in Tomato Sauce	1 cup	2 bread 1 Veg. B ¼ fat
Spaghetti in Meat/Tomato Sauce	1 cup	1½ bread 1¼ meat 1 fat ½ Veg. B
Raviolo in Meat/Tomato Sauce	1 cup	1½ bread 1½ Veg. B 1¼ meat

** Restaurant orders run about 2 cups.

EXCHANGE UNITS FOR CHINESE FOODS

Item	Quantity	Units
Chop Suey with Rice	Restaurant Order	1 Veg. group B 2 bread 2 meat
Chow Mein with Noodles	Restaurant Order	1 Veg. group B 1 bread 2 meat 1 fat
Chinese Vegetables	3/4 cup	1 Veg. group B
Chow Mein Noodles	1/3 cup	1 bread 1 fat

EXCHANGE UNITS FOR REPRESENTATIVE FROZEN CONVENIENCE FOODS

Item	Quantity	Units
Fried Chicken with Whipped Potatoes	1 package	2 bread 3 meat 1½ fat
Salisbury Steak with Crinkle Cut Potatoes	1 package	2 bread 2 meat 1½ fat
Meat Loaf with Tomato Sauce and Whipped Potatoes	1 package	1 Veg. B 1 bread 2 meat 1½ fat
Turkey, Dressing, Gravy and Whipped Potatoes	1 package	2 bread 2 meat ¼ fat

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From: Casa Grande Clinic, 1023 E. Florence Blvd., Casa Grande, AZ 85222.

EXCHANGE UNITS FOR REPRESENTATIVE CANNED SOUPS

Item	Quantity	Units
Old Fashioned Tomato with Rice	1 cup	¼ Veg. B 1 bread ½ fat
Manhattan Style Clam Chowder	1 cup	½ Veg. B ½ bread ¼ meat ½ fat
Minestrone	1 cup	½ Veg. B ½ bread ½ fat
Cream of Potato	1 cup	¼ Veg. B ½ bread ¼ fat ¼ milk
Chicken Noodle	1 cup	½ bread ¼ meat
Onion	1 cup	½ Veg. B ½ meat
Scotch Broth	1 cup	1 Veg. B ¼ bread ½ meat

EXCHANGE UNITS FOR PIE

Item	Quantity	Units
Lemon Cream (without meringue or whipped cream)	1/8 of 9″ pie	1 bread 1½ fat
Apple	1/8 of 9″ pie	1 fruit 1 bread 2 fat

DAILY MENU GUIDE (1500 Calories)

Lunch	Standard Units	Modified Units
	(No change needed for lunch)	
Dinner	**Standard Units**	**Modified Units**
Meat	3	2
Bread	2	2
Fat	2	2
Vegetable B	1	1
Fruit	1	2

DAILY MENU GUIDE (1200 Calories)

Lunch	Standard Units	Modified Units
Meat	2	1
Bread	1½	1
Fat	0	1
Fruit	1	1
Milk	½	½
Dinner	**Standard Units**	**Modified Units**
Meat	3	2
Bread	1	2
Fat	1	2
Vegetable B	1	1
Fruit	1	1

Out of Context

There was a time when the word provider had a somewhat different connotation than its present day translation. How many times in the past have you heard this statement, "he drinks a little, perhaps chases around, but he is a good provider for his family?" Although the suggestion that a man who is a good provider for his family did not excuse his other shortcomings, it certainly was thrown on the positive side of the scale to balance his negative qualities. Provider meant sustainer of life and bringing of comfort to his spouse and offspring.

"Somewhere along the line 'consumerism' changed the meaning from provider of sustenance and comfort to provider of services and goods with a negative connotation. Providers are no longer people who are helpful and kindly and supportive. They are now considered adversaries. They are accused of driving up the cost of medical care, presumably attacking the public till in the effort to enrich themselves at the expense of the citizenry."

Well if you think the word provider is not taken on aura of distrust, dismay and suspicion, just attend one of the Health Planning Agency meetings in your area. You will come to find out that the word provider, is an appelation applied to a somewhat second class citizen.

Dry Gulch Jake
John W. Kennedy, M.D.

Ref: The Massachusetts Physician, October 1977.

U of A
Grand Rounds

The Thyroid Nodule Problem: An Assessment

Sidney C. Werner, M.D.

The thyroid nodule problem originates from the fact that a given solitary thyroid nodule may be or is associated with thyroid cancer. Two areas of dispute thus arise. Since the incidence of cancer is generally considered to be about 10%, including occult or microscopic cancer, one area centers on whether all patients with solitary, particularly cold, nodules on scan, should be operated upon to "rescue" the 10% with "cancer". The other area concerns the fact that the incidence of thyroid cancer in the general population (57,000 per million if occult cancer is included, 25 per million if only overt cancer is considered) is very high relative to the death rate (6 per million).[1]

There is little argument over the dictum that thyroid nodules causing local obstruction should be operated upon; or that most nontoxic multinodular goiters should be treated medically since the risk of cancer is small. Hence, these derangements are not further considered.

Prior to 1953, all thyroid nodules were operated upon. In that year, however, Greer and Astwood suggested that an older practice, treating nontoxic diffuse goiter with thyroid, be applied to nontoxic nodular goiter (NTNG).[2] They claimed for both multiple and uninodular forms that there was neither morbidity nor mortality from thyroid cancer during the treatment period. Thus began the controversy over surgery versus medical management which continues to date.

PHYSICAL EXAMINATION:

Obviously, there is no thyroid nodule problem unless a nodule is detected. Therefore, the thyroid needs to be examined routinely in every general physical examination; but more important, an adequate technique of examination[3] must be employed. Smaller nodules are often missed when the thyroid lobe is not displaced from its bed alongside and behind the trachea. The location of the nodule within the thyroid is significant: the likelihood of cancer is greater if the nodule is at the superior pole of the lobe or junction of lobe and isthmus. Consistency and size are also important: Cancerous nodules tend to be hard and somewhat irregular, but the surface is often unusually smooth to the touch. Presence of an adjacent palpably enlarged lymph node(s) adds to the suspicion. Cancer occasionally may be soft or undetectable despite lymph node involvement. Oppositely, a hard slippery nodule may be chronic thyroiditis. Nevertheless, in experienced hands, about 50% of overt cancerous nodules can be diagnosed on examination.[4] Additionally, nodules 3 or 4 cm in diameter or greater are more apt to be malignant.

A seemingly solid nontoxic nodule may prove to be cystic (about 20% of nodules) or may feel cystic and be solid. Equally, about 20% of so called solitary nodules turn out at operation to be clusters of small benign nodules.

DIAGNOSTIC MEASURES:

Thyroid scanning serves to identify the functional status of nodules 1 cm or greater in size, i.e., nonfunctional or "cold"; functional or "warm"; or hyperfunctional or "hot". The first is due to effective hormonogenesis. Since chronic thyroiditis, adenoma or carcinoma show similar defects, scanning serves only to separate out the "hot" nodules with little risk of cancer from solitary "cold" nodules with higher incidence. The lower limit of nodule detection is about 1.0 cm.

A small, several mm. defect in the scan is frequently apparent though no nodule is palpable. This finding is not to be taken as suspicious of cancer unless the patient's thyroid was exposed to radiation in youth. However, if it is felt wise to pursue the finding, the gland is optimally then examined under the scanner and by several observers. If no nodule is palpable, no further measures are required, except perhaps observation, or suppressive therapy if there has been radiation exposure.

Fluorescent scanning determines inorganic iodine content instead of uptake and has the same lower limit of detection. It is held that thyroid carcinoma has little iodine relative to other lesions and so may usually be distinguished from NTNG, but not benign adenoma.

Ultrasonography serves to distinguish a solid mass from a cystic one, particularly when the gray zone method is employed.[5] Cancer is not diagnosed thereby and, on occasion, solid tumor may be interpreted as cystic and vice versa. The method is useful in demonstrating compression by a nodule of neighboring structures in the neck, or in following nodule size during suppressive treatment.

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TABLE 1

Some prevalences of thyroid carcinoma at autopsy*

Hazard & Kaufman	Cleveland, Ohio	0.9% (Am. J. Clin. Path., 1952)
Sampson et al	Olmsted County, Minn.	5.7% (Cancer, 1974)
Ludwig & Nishiyama	Ann Arbor, Mich.	13.0% (Int. Acad. Path., 1976)
Sampson, et al	Hiroshima & Nagasaki	17.9%** (JAMA, 1969)
	Hiroshima & Nagasaki	28.4%*** (JAMA, 1969)
Fukunaga & Yatani	Sendai, Japan	28.4%** (Cancer, 1975)
	Colombia, S.A.	5.6%** (Cancer, 1975)
	Poland	9.1%** (Cancer, 1975)

* Modified from Sampson, R.J.[10]

** Standardized procedure, one block, one slide.

*** Serial section

Needle Biopsy:

The technique of fine needle biopsy was introduced in Sweden in 1962[6] but did not achieve widespread acceptance until recent development of expertise in cytological examination. The use of a hypodermic needle permits entry into almost any nodule that can be palpated and allows removal of fluid if present or examination of a cell sample if the nodule is solid. Diagnostic correspondence is estimated at 85% to 90%[7] with or without concomitant ultrasonography. Fine and coarse needle biopsy employed together has the advantage that if the sample from coarse needle biopsy is unsatisfactory, there is still the cytological aspirate to be studied diagnostically.

Coarse needle biopsy was introduced in the 1950's and presently makes use of a 14-16 gauge needle such as the Vim-Silverman one. A core of tissue is obtained which permits standard histological examination. It is also held to be close to 90% reliable diagnostically.[8]

Sources of error in which cancer may be missed arise primarily from thin wall cysts (2% likelihood of carcinoma) or with adenoma malignum. In both of these conditions, diagnostic confusion exist even with the whole surgical specimen available. Turbid or sanguinous fluid from cysts, particularly of 3 or 4 cm in diameter or greater, considerably increases the possibility that cancer is present. Occasionally a nodule is biopsied that is not that under suspicion; or a nodule may not be accessible to biopsy.

Biology of Thyroid Carcinoma:

The most common form of thyroid "cancer" is the occult (minimal) one, less than 1 cm in diameter to microscopic in size.[9] These lesions have been identified at any age including youth, in surgical and autopsy material. Autopsy figures for the United States reveal about 5.7% prevalence[10] in those dying of nonthyroidal disease. For Japan, between 18.7 and 28.4%; and for other countries of the world, somewhere in-between (Table 1). Results from several major surgical series, as well as the uniformly low death rate from thyroid cancer have led to the conclusion that occult thyroid cancer is a benign disease. The same conclusion has been drawn for similar microscopic lesions which can be found in breast and prostate (about 30% incidence). An exception to the rule may be occult medullary thyroid cancer. These lesions can be detected by the presence of increased calcitonin concentrations in the serum. Medullary cancer is a tumor of the "C" cells of the thyroid. These cells are of neural crest origin and so are not thyroid follicular cells.

The most common thyroid cancer is papillary or mixed papillary follicular, accounting for about 50% of the total. Post-operatively, before age 40 to 45 years, tumor behavior is primarily benign, even with metastasis to local lymph nodes or lungs. The disorder is multifocal, being present in 85% of contralateral lobes removed by total thyroidectomy at the M.D. Anderson Hospital.[11] Yet only 2% of McClintock's patients undergoing lobectomy for papillary cancer developed a lesion in the contralateral lobe on long term follow-up. In Woolner and group's patients operated upon for papillary cancer and followed for up to 40 years,[9] life expectancy was normal when tumor was not invasive (extranodally particularly). With invasiveness, or after age 40-45, or nodule size over 4 cm, only 50% of patients had a normal life span.

Follicular carcinoma is next most common, accounting for about 25%. Prognosis depends on blood vessel invasion or spread to distant sites. About 15% of thyroid cancers are undifferentiated and these are almost uniformly fatal, within 6 months to several years postoperatively. The remainder, about 10%, is medullary, with aggressiveness between follicular and undifferentiated carcinoma, particularly after nodal or extranodal spread.

Following the identical surgical procedure, even by the same surgeon, papillary adenocarcinoma in a younger patient may be rapidly fatal. Such a phenomenon, as well as the different prognoses before and after age 45, is difficult to explain by the view that operation effectively removes all cancer cells. Rather, differences in the host's internal milieu would seem to be responsible. Doniach has theorized[12] that there is an initiating factor for thyroid cancer but that an endogenous promoting factor in the host is required (perhaps TSH). Differences in the equilibrium between host promoting factors and host defenses would thus seem to account for different outcomes.

In this direction, in a survey of factors thought to correlate with thyroid cancer behavior, particularly relating to tumor histology, Kellum and Spratt concluded that only the patient's course, not the microscopic findings, was useful prognostically.[3]

Thyroid Irradiation in Youth:

Inadvertent irradiation of the thyroid in youth during treatment of nearby structures such as the thymus, or from the atomic bomb, has led to the current "epidemic" of thyroid cancer.[14,15] This has only aggravated the thyroid nodule problem. Despite the several conferences on the subject with majority vote conclusions, surgical and medical opinions mostly remain divergent.

One reason for this is the frequent weighting of occult cancer (1 cm or less down to microscopic) post-irradiation as being potentially equivalent to life-threatening overt cancer. At the University of Chicago conference,[14] surgical thought insisted that occult follicular and medullary occult ("minimal") cancers carry a worse prognosis than the prevalent papillary ones. Medullary cancer prevalence, however, has not risen post-irradiation, nor has morbidity or mortality for thyroid cancer post-radiation, in general.[14]

TABLE 2

Atomic Bomb Casualty Commission Study*

No persons followed	100,000
Occult thyroid carcinomas	(estimated) 28,400
Surgically excised tumors/15 years	90
Deaths from thyroid cancer/15 years	5

* From Sampson, R.J.[10]

Thus, Sampson's studies of the Japanese exposed and unexposed to the atomic bomb at Hiroshima and Nagasaki[10] revealed a near doubling of prevalence of occult cancer (1.5 cm or less) after exposure, but no difference in mortality (Table 1). In an autopsy study (Table 2), and in an ongoing survey of the unirradiated population followed for 15 years in which there were 90 nodules surgically removed from 100,000 people, death rates were comparable, 5 deaths from thyroid cancer occurred in either series. Similarly, the death rate has been low despite increased thyroid cancer prevalence, after 20 years follow up of children exposed to thymic irradiation in infancy.[16]

Management of the Overt Thyroid Nodule:

No Prior Irradiation

Careful examination[3] and the finding of an excess of circulating thyroglobulin over 100 ng/dl,[17] should distinguish at least half the nodules more apt to be cancerous than benign. Thyroid function studies (T4, RIA, T3U and T3RIA) and thyroid scan serve to separate functional from non-functional nodules but not to diagnose cancer. For the "cold" nodule, ultrasonography may differentiate between cystic and solid nodules. Chronic lymphocytic-thyroiditis can often be diagnosed in general by serum antithyroid antibody determinations. Fluorescent scanning may reveal considerable reduction in nodule iodine content, suggesting cancer.

Since needle biopsy provides almost 90% correspondence with the final diagnosis and usually reveals fluid when present, ultrasonography can be optional. Should the needle biopsy reveal benign cellular and structural findings, suppressive therapy with thyroid hormone, usually sodium L-thyroxine, can be given indefinitely unless the nodule were to grow.[18] In this event, especially if the mass was solid, surgery is indicated.

If the needle biopsy is reported "suspicious" or definitely malignant, surgery is in order. Medullary carcinoma (serum calcitonin increased) should be removed surgically. Treatment of undifferentiated thyroid cancer medically may be at hand. Durie and group,[19] have given, following surgery, 131-1 therapy to eliminate hyperfunctioning cells, thyroxine as suppressive therapy, four chemotherapeutic agents in serial courses, and BCG, to 4 patients. Two have survived for between 3 and 4 years and 2 between 1 and 2 years. The chemical agents used were adriamycin, melphalan, vincristine, and bleomycin.

Post Irradiation

Since prevalence of thyroid cancer but not mortality and morbidity has increased following radiation to the thyroid in youth, it would seem to this author, therefore, that the same principles that are applied to management of non-irradiated patients with a palpable solitary nodule can be applied to irradiated patients with the same lesion.[18] Despite the induced increase in cancer prevalence, there is still a great preponderance of overt benign nodularity post-irradiation. Also, most post-irradiation cancers are papillary. Since needle biopsy is still available, should there be doubt over whether a nodule in an irradiated gland is benign or not, a "benign" needle biopsy report can be taken at the same face value as for the spontaneous nodule.

At the University of Chicago meeting the chief source of difference between the minority and the majority centered around the management of those nodules between 1 cm and 4 cm in size, the final recommendation of this and the NIH conference[14,15] for such nodules being surgical removal.

SUMMARY:

Available evidence overwhelmingly indicates that occult or minimal thyroid cancer, is a benign disease. Overt nodules, 1 cm in size or more are mostly NTNG. Half of those that are malignant can be diagnosed as cancer on physical examination. Excess of circulating thyroglobulin is found with most papillary and follicular cancer, and reduced nodule iodine content on fluorescent scanning. In case of doubt, loss of nodule function can be determined by thyroid scan; fluid versus solid tumor by ultrasonography or by needle biopsy; and a histological diagnosis made with 90% reliability by fine needle, coarse needle, or fine and coarse needle biopsy. Medullary thyroid cancer can be excluded by serum calcitonin determinations. Following thyroid irradiation in youth, prevalence of thyroid cancer is nearly doubled but mortality or morbidity are not increased. The principles for management of a nodule in the non-irradiated gland have been outlined. It is suggested that the same principles be applied to the nodule(s) detected later in life in the gland irradiated in youth.

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Controversies
In Medicine

Oral Hypoglycemic Drugs:

Should they be used?
Two Views

William James Howard, M.D.

Since the discovery of insulin more than 50 years ago, the cause of morbidity and mortality from diabetes mellitus has changed from the metabolic disturbances of this disease to the vascular complications which are peculiar to chronic diabetes mellitus. Although many observers feel that these vascular changes are a direct result of the hyperglycemic and other biochemical abnormalities that accompany diabetes mellitus, there is still no convincing scientific evidence to establish this cause and effect relationship.[1] In 1959 and 1960 a group of interested clinicians and an epidemiologist statistician formed the University Group Diabetes Program[2] (UGDP) to attempt to answer this clinical question. By 1961 an extensive prospective study was launched which included the cooperative efforts of 12 university diabetes clinics. During the next 10 years 1027 mild, non-ketosis prone diabetic patients were studied following randomization to 5 treatment groups: 1) placebo plus diet, 2) tolbutamide plus diet, 3) phenformin plus diet, 4) a standard dose of Lente indulin plus diet and, 5) a variable dose of insulin plus diet. The UGDP study led to the conclusion that there was no demonstrable benefit of any form of drug therapy over placebo in preventing the vascular complications of Diabetes Mellitus.[3] However, the significance of this conclusion was totally overshadowed by the uproar which resulted from the second conclusion of the UGDP study, namely that there was an increased cardiovascular mortality in the tolbutamide and phenformin treatment groups.[2,4]

Due to the controversy generated by this study, a large number of papers soon appeared which were both pro and con in reference to the UGDP's conclusion concerning the increased mortality in the tolbutamide and phenformin treatment groups. In an attempt to help settle this controversy, the prestigous Biometric Society was asked to independently examine all aspects of the UGDP study.

From: Good Samaritan Hospital, 1033 E. McDowell Rd., Phoenix, AZ 86006, Dr. Howard, Dir., Medical Residency Programs.

P.J. Savage

Introduction of the oral sulfonylureas raised hope that a simple treatment for the majority of maturity-onset diabetics would control not only hyperglycemia, but would help reduce the incidence of long-term vascular complications. The failure of these drugs to fulfill these expectations has recently been reviewed.[1]. Practicing physicians need to reassess use of the sulfonylureas by reviewing their benefits, their toxicity and alternate modes of therapy.

The major effect of the sulfonylureas is the reduction of circulating glucose levels in subjects with residual insulin secretory capacity. This benefit is transient in the majority of patients. After seven to nine years of follow-up, only 21 percent of patients receiving tolbutamide and 31 percent receiving chlorpropamide remained under satisfactory control.[2] In another study approximately one-fourth of patients initially controlled with these drugs failed each year. Although the failure rate is probably lower in asymptomatic subjects with mild hyperglycemia there is no evidence of benefit from such therapy.

Many subjects with mild hyperglycemia revert spontaneously to normal or near normal glucose tolerance without drug therapy and appear to be controlled. There is no evidence that sulfonylureas increase the frequency or duration of these remissions. There is also no convincing evidence that reduction of hyperglycemia by the sulfonylureas can significantly lower cholesterol levels.

The results of the University Group Diabetes Program (UGDP) study led to a controversy regarding the possible cardiovascular toxicity of the sulfonylureas.[3] Despite counter-arguments, the UGDP study remains the best study of these agents ever undertaken. Its essential validity has been confirmed by independent experts. There is little controversy over the key finding of the study - the failure of tolbutamide to provide any

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From: Dept. of HEW, Public Health Service, National Institutes of Health, 1440 East Indian School Rd., Phoenix, AZ 85014. Dr. Savage, Staff Physician

Following extensive analysis, the Biometric Society concluded that although there were a number of justifiable criticisms of the UGDP, this study did show a statistically significant increased mortality among women in the tolbutamide group.[5] This conclusion could not be confirmed in men due to the small number of male patients in the study. The Biometric Society also analyzed other studies which did not support the findings of the UGDP, but found that the data from these studies was inadequate to disprove the conclusions of the UDGP.

In examining the UGDP data on the effect of therapy on carbohydrate tolerance another interesting finding emerges. Although all forms of therapy, including placebo, resulted in an initial significant lowering of blood sugar, only the treatment group receiving a variable dose of insulin maintained a state of improved carbohydrate tolerance.[2] At the end of approximately 4 years of therapy, the group receiving tolbutamide had returned to their baseline levels of glucose intolerance and by 5 years this group displayed higher levels of blood sugar than at the start of the study. A number of other studies have confirmed that tolbutamide and other oral hypoglycemic drugs have a significant level of primary and secondary failure. Several recent reviews of oral hypoglycemic agents document the poor long-term efficacy of these drugs.[6,7] Even the Committee on the Care of the Diabetic, a group formed to support the use of oral hypoglycemics, agrees that these drugs loose their blood glucose lowering effect in the majority of individuals within 5 years.[8]

Approximately 8 years have elapsed since the report of the UGDP was released; however, the controversy surrounding the sulfonylurea hypoglycemic agents continues. Only phenformin has been removed from active debate concerning oral anti-diabetic drugs through the action of the FDA to discontinue its medical usage in the U.S. Many U.S. diabetologists feel that the sulfonylureas also have no place in the therapy of diabetes. Soon after the UGDP study was released, the use of all oral agents was abandoned at the Grady Hospital in Atlanta. These drugs were discontinued in 1,500 patients and in a follow-up study 18 months later, 60% of these patients were satisfactorily controlled on diet alone.[9] On the other hand, there has been much less concern in England and Europe concerning the safety of oral hypoglycemics, and many U.S. diabetologists still feel there is a place for these drugs in their therapeutic armamentarium. In spite of the controversy, the sales of oral agents in the U.S. has not changed significantly. Yet even the proponents of oral hypoglymcemic usage agree that these agents have a limited role in the therapy of diabetes. There has never been any question about the fact that these drugs are not indicated in ketosis prone, juvenile onset diabetics. There is also general agreement that a weight reduction diet is the mainstay of therapy in the obese, non-ketosis prone diabetic. Many now feel that this should be the only therapy, at least initially, in the asymptomatic diabetic

long-term benefit over placebo therapy. This, and its possible toxicity, should be cause for concern for anyone prescribing sulfonylureas. Since these drugs are related compounds a lack of similar toxicity needs to be proven rather than assumed.

Recently, there has been renewed emphasis on dietary restriction in the treatment of obese maturity-onset diabetics. The benefits of diet in such patients have been known for more than a century. A recent study in an outpatient diabetic clinic has also demonstrated that modest weight reduction leads to major improvements in glucose tolerance and to increased pancreatic insulin secretion.[4] In addition, dietary restriction reduces blood pressure[5] and levels of cholesterol and triglycerides - additional risk factors for cardiovascular disease, which may be particularly deleterious to diabetics. A final benefit of diet is involvement of the patient in his care by emphasizing his responsibility for the control of his disease. In those patients where diet does not eliminate symptoms the use of insulin is safer than sulfonylurea therapy and provides the physician with far more flexibility in controlling glucose levels.

The use of sulfonylureas should be restricted to those symptomatic diabetics who cannot be controlled by diet alone and for whom the use of insulin would pose very great difficulties. An example of justifiable use would be in a ketosis resistant blind diabetic patient who could not measure or inject insulin correctly. Even in these subjects the need for continuation of sulfonylureas should be reassessed periodically by a trial without therapy.

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Dr. Howard, cont.

and that additional pharmacological treatment should be considered only in those who are symptomatic or who do not respond to diet therapy alone. Diabetologists are still split as to whether sulfonylureas should be considered as one of these additional therapeutic modalities. A middle of the road view has recently been expressed by Bierman who feels sulfonylureas have a potential role in those nonketotic diabetics who are free of acute complications and "in whom control of hyperglycemia by weight reduction alone or with insulin treatment is not possible."[10] Dr. Bierman lists those who are allergic to insulin, refuse insulin injections, or the elderly, blind diabetic who lives alone as patients in whom insulin control may not be practical. There is also general agreement that if sulfonylureas are used, periodic reevaluations of the continued efficacy of these drugs is indicated due to their high rate of secondary failure.

In summary, the practicing physician must continue to make the decision as to whether or not to use sulfonylureas amidst controversy and without clear-cut answers to important clinical questions. This decision must be individualized for each patient. The significant rate of primary and secondary failure of these agents with time must be considered in choosing initial therapy and in continuing existing therapy with these drugs. While not conclusive, the UGDP's mortality data cannot be overlooked. One of the principal benefits of oral hypoglycemics is convenience. If convenience is the chief reason for employing one of these sulfonylurea drugs in an individual patient, one must strongly question whether the use of such a drug is justified in light of their risk and minimal long-term efficacy.

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AMA Congress on Occupational Health in Arizona

The American Medical Association will hold its 38th Annual Congress on Occupational Health in Tucson, September 14-16, 1978 at the University of Arizona Health Sciences Center. This is the first time that the AMA will hold this meeting in Arizona. It is an honor which coincides with the awarding of the grant from the National Institute of Occupational Safety and Health (NIOSH) to the University of Arizona for the establishment of an Educational Resource Center in Occupational Safety and Health. The new center, now known as the Arizona Center for Occupational Safety and Health, has been working with the AMA in the development of the program for the Congress.

The program will be of interest to all physicians, since occupational medicine interfaces with virtually every field of clinical medicine. Subjects to be covered by a number of prominent physicians and other scientists include reproductive disorders related to occupation, injuries to the extremities, arthritides, and cellular transformations (carcinogenesis, mutagenesis and teratogenesis).

Other interesting developments for the southwest will be discussed in a session entitled "Case Histories". These include the new IBM program in Tucson, the U.S. Mexico Border Industrialization program and the tremendous industrial developments occurring on the Navajo reservation. A prominent lawyer will present a provocative discussion on the confidentiality of medical records and the worker's "right to know".

Several medical students will present their experiences on occupational health projects. There will be workshops on pulmonary function testing and environmental monitoring. Medical educators will be interested in participating in the special sessions devoted to future occupational physicians and what their training should be. Those who are connected with industry will be especially attracted to the discussions on Occupational Safety and Health Administration by its Director, Eula Bingham, and the Educational Resource Centers by Allen Stevens of NIOSH.

It is generally recognized that the incidence of occupational disease is much greater than is reflected in the official reports. Cancer scientists now attribute 80% or more of cancer to environmental factors. Similarly, we look to the environment for the causes of many other health problems.

The field of occupational safety and health is considered by many to be among the last great frontiers in public health. There are enormous potential career opportunities for individuals entering the field. Today, occupational physicians work in a great variety of capacities from corporate medical directors to surgeons, dermatologists and psychiatrists.

The AMA Congress will be an important event for Arizona, affording us a unique opportunity to be brought up-to-date on some of the new developments in the environmental and occupational aspects of medicine. The AMA has approved 15 Category 1 hours of continuing medical education credit for attendance at this meeting, and the American Academy of Family Physicians has approved 15 hours of elective credit.

Herbert K. Abrahms, M.D.
Director, Arizona Center for
Occupational Safety and Health

Louis J. Kettel, M.D.
Dean, College of Medicine

AUXILIARY HIGHLIGHTS

Arizona's stated position, of positive concern for the professional image, was in matching company at the Medical Auxiliary Convention in St. Louis where the national president rallied the 352 delegates to practice "defensive medicine" on the public image of doctors and their families in counteracting the county club socialite, media vision of the past.

Mrs. Manuel A. Bergnes, National President, Norristown, Pa., called for the recapture of the energizing forces of Volunteer Power. She sought the positive action of Auxiliary members regarding the familiar concerns of medical education, government involvement, inner city health, and nutrition.

New emphasis was directed toward rising health care costs. Members were urged to be cognizant of costs and to generate positive activity aimed at alleviating the spiraling problem. Tighter evaluation of the patient's genuine need was specified as one means of curtailing costs of medications and tests required of the patient.

Keynote speaker Bjorn Secher, international author and lecturer, declared the Power of the Mind to be the greatest human attribute, giving value to our work.

State President Carolyn (Mrs. James) Parsons has reported the convention program as timely and of high quality. Rafail Good, M.D., Assoc. of Psychiatry, Obstetrics, and Gynecology, University of Miami School of Medicine, reviewed the Origins of Maleness and Femaleness; while economist Eliot Janeway proposed an organized arrangement to offer health services outside the United States, at a price others can understand and relate to in planning economic exchanges.

The Joys and Sorrows of the Physician-Marriage were discussed by a four-member panel which recognized all individuals' goal-periods of life, and sited difficulties evidenced by psychiatrists' case histories. Heading the list was too little time for the family. Losing one's sense of humor, and impairment from alcohol and drugs were reviewed as major problems.

In proposing an improved public image of the field of medicine, it was noted that Auxiliary members may finally have to focus a little attention upon themselves in adding greater credibility to the tasks at hand and enhancing public relations. Badges or similar devices have been recommended for use during volunteer service time to specifically identify the doctor's spouse with the humanitarian resource role, tradition of the Auxiliary in each community.

Auxiliary Editor
Mrs. Melvin W. (Jean) Phillips

CME REQUIREMENTS EXPLAINED

"CME — Continuing Medical Education — Category 1 — Requirement for ArMA membership — 150 hours — Physician's Recognition Award — Mandatory for licensure — 60 hours in field of practice."

If you are confused by the battery of instructions, guidelines, regulations, etc., directed to you via mail and publications, it is understandable. No attempt will be made here to comment on the effectiveness or non-effectiveness of the concept of required reporting of CME. This is written in an attempt to alleviate some of the confusion by presenting the facts.

In 1971 the ArMA House of Delegates voted to require that members of ArMA report 150 hours of continuing medical education activities every three years in order to maintain their membership. Sixty (60) hours of the total 150 *must* be in Category 1 (required); the remaining 90 hours *may* be in Category 1 or any of the other Categories 2 through 6 (elective).

These six categories, their descriptions and criteria, conform almost precisely to the requirements for the Physician's Recognition Award (PRA) of the American Medical Association (AMA). The few exceptions were made in order to provide additional options to Arizona physicians.

The AMA has agreed to reciprocate with the ArMA Certificate and to issue the PRA to any physician who has received the ArMA Certificate. In turn, the ArMA Certificate is issued to any physician who has received the AMA/PRA.

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As CME has increasingly been mandated by specialty societies for membership, the AMA has agreed to reciprocate based on meeting requirements of those societies. ArMA has also agreed to reciprocate, so that now a physician may receive the ArMA Certificate by submitting verification of CME certification by any of the following approved specialty societies.

- American Academy of Dermatology
- American College of Emergency Physicians
- American Academy of Family Physicians
- American Association of Neurological Surgeons/Congress of Neurological Surgeons
- American College of Obstetricians and Gynecologists
- American College of Radiology
- American Society of Clinical Pathologists/College of American Pathologists
- American Society of Colon and Rectal Surgeons

ArMA maintains records on all physicians who receive the ArMA CME Certificate, and each year sends application forms and guidelines to those who are due to report that year. The ArMA Certificate was originally issued from July 1-June 30, but in 1976 this was changed to January 1-December 31 in order to be compatible with most other CME requirements. The one exception is the AMA/PRA, which is issued at whatever date it is submitted, and thereby does create some confusion. The AMA has recently begun issuing *reciprocal* PRA's for the same calendar period as the ArMA Certificate, which hopefully lessens confusion somewhat. However, if a physician does apply directly to the AMA, his PRA will be issued at whatever date it is submitted.

Although there was initially a fee charged for both the ArMA Certificates and the AMA/PRA, this fee was dropped for ArMA members in 1976, and at the same time the AMA agreed to drop the fee for all members from unified states. There is currently a $25 fee charged to nonmembers for either the ArMA Certificate or the AMA/PRA.

* * *

So much for CME as a membership requirement. A new dimension was added with the passage in February, 1976, of H.B. 2001, which contained amendments to the Medical Practice Act mandating reporting of CME participation as a requirement for continued licensure in the State of Arizona. That law became effective February 27, 1976, and provided for a three-year reporting period. This in essence means that as of February, 1979, a physician must show proof of participation in CME activities during the preceding three-year period in order to renew his license to practice medicine in Arizona. Since license to practice is issued from January 1 - December 31, physicians are required to report their CME at the time of re-registration of license for 1979.

The Board of Medical Examiners (BOMEX) has developed Rules and Regulations concerning CME which vary somewhat from the requirements for membership in ArMA, and therefore may have resulted in more confusion to Arizona physicians.

Basically, BOMEX will accept a current ArMA Certificate or AMA/PRA or a CME certificate from any approved state or county medical society or national specialty society. BOMEX regulations must necessarily be broad enough to cover *all* licensed physicians, member or nonmember, and include the large numbers of physicians licensed in Arizona but practicing elsewhere. Therefore, they have also agreed to accept a listing of 60 hours of *approved* CME, (ed. — equivalent to Category 1) over a three-year period, *all of which must be in the physician's field of practice,* as an alternative to having received a CME certificate from some other source.

However, if a physician has obtained a CME certificate from another source, all he need do to meet the licensure requirement is submit verification of his certificate to BOMEX. The certificate must be current, that is, *valid through February of 1979.* This means that a 1976, 1977 or 1978 ArMA Certificate meets the requirement for licensure for 1979.

To simplify reporting, BOMEX has agreed to accept from ArMA a list of all physicians holding a *current* ArMA Certificate as evidence of meeting the licensure requirement. The staff of ArMA has prepared such a list of all physicians holding a 1976 or 1977 ArMA Certificate, and will report to BOMEX as 1978 certificates are issued.

Any physicians wishing information concerning the ArMA Certificate in CME are urged to contact the ArMA office at any time.

Misty Coumbe
Associate Executive Director
ArMA

Future Medical Meetings

CONTINUING MEDICAL EDUCATION

The following institutions and organizations have been accredited for their continuing medical education programs by the Liaison Committee on Continuing Medical Education.

Arizona Heart Institute
Arizona Medical Association, Inc.
Arizona State Hospital, Phoenix
Desert Samaritan Hospital, Mesa
Good Samaritan Hospital, Phoenix
Health Maintenance Associates
Phoenix Indian Medical Center
Phoenix Psychiatric Council
Maricopa County General Hospital, Phoenix
Memorial Hospital, Phoenix
St. Luke's Hospital & Medical Center, Phoenix
St. Joseph's Hospital & Medical Center, Phoenix
Tucson Hospitals Medical Education Program, Tucson
U of A College of Medicine
Veterans Administration Center, Prescott
Veterans Administration Hospital, Phoenix

The accredited institutions and organizations above produce a variety of continuing medical education programs. Each accredited institution and organization is responsible for designating which of these programs meet ArMA's requirements for Category 1 credit. Physicians who participate in programs which are designated Category 1 by accredited institutions will receive Category 1 credit toward the ArMA Certificate in CME and the AMA's Physician's Recognition Award.

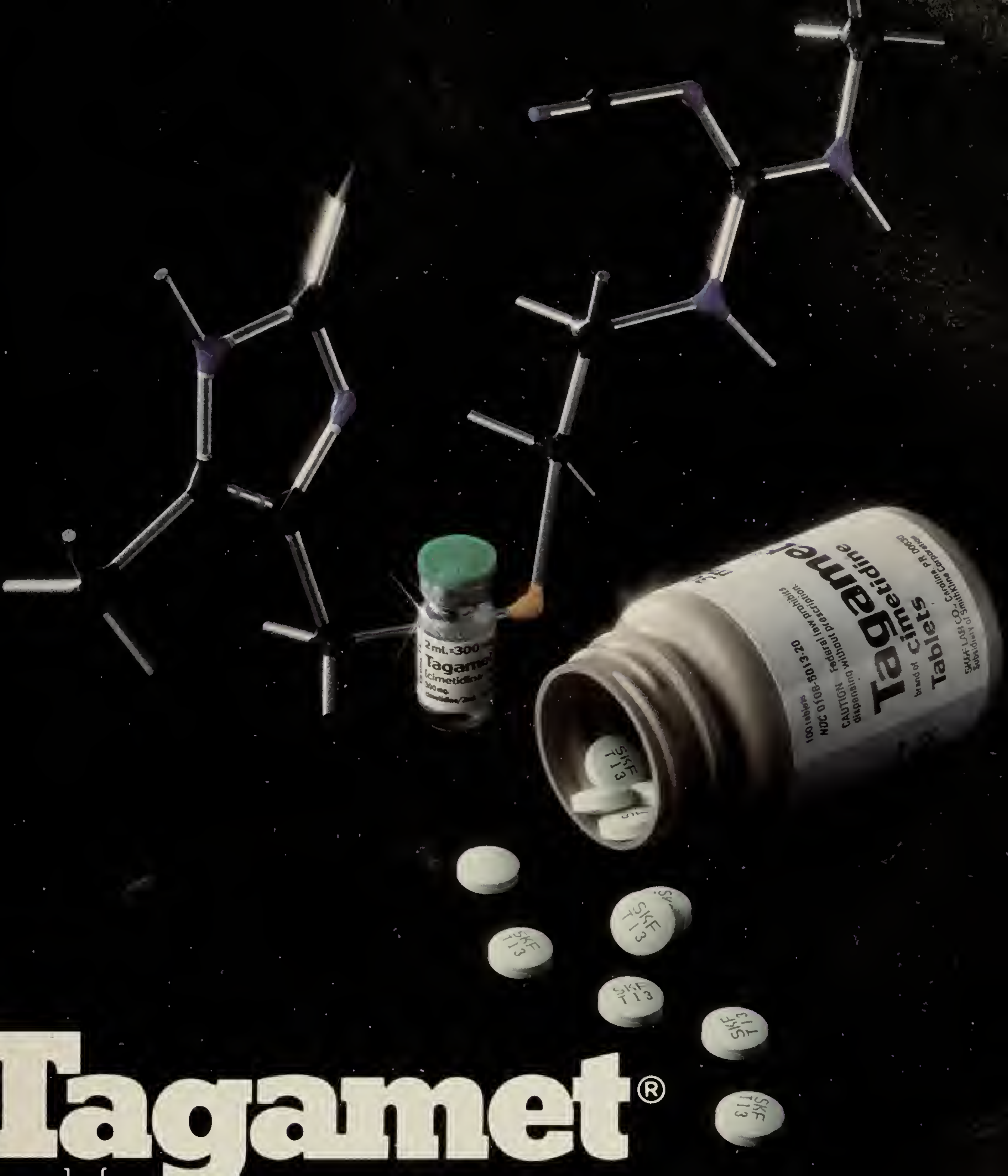
Individual program listings below indicate Category of CME. Where not indicated, no credit has been approved. For further information on any programs, contact person named.

SEPTEMBER

Arizona Society for Respiratory Therapy
September 6, 7, 8, Tucson, Arizona. Contact: Steve Krug, Chairman, c/o Tucson General Hospital, 3838 N. Campbell Ave., Tucson, AZ 85719.

Medical Assistants
September 7, 1978, 7:30 p.m. Arizona Medical Association building, 810 W. Bethany Home Rd., Phoenix, AZ. Contact: Marylou Broxon, Publicity Chairman, 13235 N. 24th Ave., Phoenix, AZ 85029. 944-4491 work phone, 942-8384 home phone.

Issues in Critical Care Medicine
September 9, 1978, 9 a.m.-4:15 p.m. Boswell Memorial Hospital, Sun City, AZ. Contact: Julius Schwimmer, M.D., 13000 N. 103rd Ave., Sun City, AZ 85351. Approved for 7 hours of category 1 credit.



Tagamet®
brand of
cimetidine

How Supplied: Pale green, 300 mg. tablets in bottles of 100 and Single Unit Packages of 100 (intended for institutional use only).
Injection, 300 mg./2 ml., in single-dose vials in packages of 10.

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a SmithKline company

Neosporin® Ointment

(Polymyxin B-Bacitracin-Neomycin)

This potent broad-spectrum antibacterial provides overlapping action to help combat infection caused by common susceptible pathogens (including staph and strep). The petrolatum base is gently occlusive, protective and enhances spreading.

Neomycin

Staphylococcus
Haemophilus
Klebsiella
Aerobacter
Escherichia
Proteus
Corynebacterium
Streptococcus
Pneumococcus

Bacitracin

Staphylococcus
Corynebacterium
Streptococcus
Pneumococcus

Polymyxin B

Pseudomonas
Haemophilus
Klebsiella
Aerobacter
Escherichia

In vitro overlapping antibacterial action of Neosporin® Ointment (polymyxin B-bacitracin-neomycin).

Wellcome

Burroughs Wellcome Co.
Research Triangle Park
North Carolina 27709

Neosporin® Ointment

(Polymyxin B-Bacitracin-Neomycin)

Each gram contains: Aerosporin® brand Polymyxin B Sulfate 5,000 units; zinc bacitracin 400 units; neomycin sulfate 5 mg (equivalent to 3.5 mg neomycin base), special white petrolatum qs; in tubes of 1 oz and 1/2 oz and 1/32 oz (approx.) foil packets.

WARNING: Because of the potential hazard of nephrotoxicity and ototoxicity due to neomycin, care should be exercised when using this product in treating extensive burns, trophic ulceration and other extensive conditions where absorption of neomycin is possible. In burns where more than 20 percent of the body surface is affected, especially if the patient has impaired renal function or is receiving other aminoglycoside antibiotics concurrently, not more than one application a day is recommended.

When using neomycin-containing products to control secondary infection in the chronic dermatoses, it should be borne in mind that the skin is more liable to become sensitized to many substances, including neomycin. The manifestation of sensitization to neomycin is usually a low grade reddening with swelling, dry scaling and itching; it may be manifest simply as failure to heal. During long-term use of neomycin-containing products, periodic examination for such signs is advisable and the patient should be told to discontinue the product if they are observed. These symptoms regress quickly on withdrawing the medication. Neomycin-containing applications should be avoided for that patient thereafter.

PRECAUTIONS: As with other antibacterial preparations, prolonged use may result in overgrowth of nonsusceptible organisms, including fungi. Appropriate measures should be taken if this occurs.

ADVERSE REACTIONS: Neomycin is a not uncommon cutaneous sensitizer. Articles in the current literature indicate an increase in the prevalence of persons allergic to neomycin. Ototoxicity and nephrotoxicity have been reported (see Warning section).

Complete literature available on request from Professional Services Dept. PML.

38th Annual AMA Congress On Occupational Health

September 14-16, 1978, Tucson, AZ. Contact: Barbara S. Jansson, Dept. of Environmental, Public & Occupational Health, AMA, 535 N. Dearborn St., Chicago, IL 60610. Approved for 15 hours of category 1 credit.

Current Problems in Pulmonary Disease

September 15 & 16, 1978. Airport Marina Hotel, Albuquerque, NM. Contact: Lovelace-Bataan Medical Center, Office of Medical Education, 5400 Gibson Blvd., S.E., A Albuquerque, NM 87108. Approved for credit hours in category 1 for the Physician's Recognition Award of the AMA & ArMA certificat e in CME.

Perinatal/Neonatal Conference of Northern Arizona

September 29 & 30, 1978. Little America, Flagstaff, AZ 86002. Sponsor: Flagstaff Hospital and Arizona Perinatal Program. Contact: Gerald McMahon, M.D., 1215 N. Beaver, Flagstaff, AZ. Approved for 12 hours of category 1 credit.

OCTOBER

Arizona Regional Meeting American College of Physicians

October 6 & 7, 1978. Registry Resort Hotel, Scottsdale, AZ. Contact: Richard Brooks, M.D., Arrangement Chairman, 3600 W. 3rd Ave., Phoenix, AZ 85013. Approved for 9 hours of category 1 credit.

NOVEMBER

Fourth Annual Pediatric & Adolescent Echocardiography Course

November 10-12, 1978. Las Vegas, Nevada. Sponsored by American Society of Echocardiography, American Institute of Ultrasound in Medicine & H.E.L.P. Contact: Pediatric Echocardiography Course, 4340 Placita Panuco, Tucson, AZ 85718. Approved for category 1 credit.

26th Annual Meeting of the Medical Society of the United States and Mexico

November 15-18, 1978. Guadalajara, Jalisco, Mexico. Contact: Mrs. Carolyn Parsons, Exec. Secy., 3161 N. Pantano Rd., Tucson, AZ 85715.

The Executive Physician Development Conference: Management in the Framework of Accounting & Finance

November 13-17, 1978. Arizona Inn, Tucson, AZ. Sponsor: U of A College of Medicine. Office of Continuing Medical Education and Outreach. Contact: Anthony F. Vuturo, M.D. Approved for 50 hours of category 1 credit.

DECEMBER

New Trends in Surgery: Arizona Chapter American College of Surgeons Annual Conference

December 1 & 2, 1978. Doubletree Inn, Scottsdale, AZ. Sponsor: Arizona Chapter of Surgeons. Contact: James J. Berens, M.D., 550 W. Thomas Rd., Phoenix, AZ 85013. Approved for 12 hours of category 1 credit.

7th Annual Seminar "Pulmonary Diseases - Part II"

December 9 & 10, 1978. Camelback Inn, Scottsdale, AZ. Sponsor: Maricopa County General Hospital. Contact: Alex Newman, M.D., Program Chairman, Dept. of Radiology,-Maricopa County General Hospital, 2601 E. Roosevelt St., Phoenix, AZ 85008. Approved for 14 hours of category 1 credit.

1979

FEBRUARY

16th Annual Meeting of the Federation of Western Societies of Neurological Science, Inc.

February 22-25, 1979. Mountain Shadows, Scottsdale, AZ. Contact: Larry Stern, M.D., Program Chairperson, U of A Dept. of Neurology, Tucson, AZ 85721.

Pediatric Update 1979

February 26 - March 1, 1979. Scottsdale Sheraton Inn, Scottsdale, AZ. Sponsor: St. Joseph's Hospital & Medical Center, Phoenix, AZ. Contact: Tracy L. Trotter, M.D., Dept. of Pediatric Education, St. Joseph's Hospital & Medical Center, 350 West Thomas Rd., Phoenix, AZ 85013. Approved for 16 hours of category 1 credit.

MONTHLY OR WEEKLY

Headache Rounds

Tuesday afternoons or Thursday mornings weekly. Sponsor: Headache Group of the Southwest. Contact: Peggy Voigt, 2610 W. Bethany Home Rd., Phoenix, AZ 85017, or phone 242-6646.

Shrine Medics Meeting

Second Tuesday of each month, Doctors Hospital, 5:45 p.m., J. South Classroom. Sponsor: Shrine Medics. Contact: Robert C. Briggs, M.D., 5121 N. Central Ave., Phoenix, AZ 85012.

Office Psychiatry for the Primary Provider

2nd Monday of month, 4811 N. 7th Street, Phoenix, AZ. Sponsor: Arizona Health Plan. Contact: T.R. Bittker, M.D., Box 5000, Phoenix, AZ 85010. Approved for category 1 credit.

Counter Transference Group

Weekly, Thurs. 8-10 p.m. Sponsor: Phoenix Psychiatric Council. Contact: James E. Campbell, M.D., 5051 N. 34th St., Phoenix, AZ 85018. Approved for 2 hours category 1 credit.

Monthly Meeting of Tucson Radiologists

Last Tues. of month. Plaza International, Tucson, AZ. Sponsor: U of A Medical Center, Dept. of Radiology. Contact: Irwin M. Freundlich, M.D., Arizona Medical Center, Dept. of Radiology, Tucson AZ 85724. Approved for 2 hours category 1 credit.

Pediatric Grand Rounds

Tuesday 7:30-8:30 a.m. in Phoenix: 1st Tues.—Phoenix Indian Hospital, 2nd Tues.—Maricopa County Hospital, 3rd Tues.—Good Samaritan Hospital, 4th Tues.—St. Joseph's Hospital. Sponsor: Maricopa County Hospital (Phoenix Hospital's Affiliated Pediatric Program). Contact: J. Kipp Charlton, M.D., 2601 E. Roosevelt, Phoenix, AZ 85008. Approved for 1 hour per session category 1 credit.

Review of Forensic Pathology, Current Case, Special Topics

Thursday, weekly, 11 a.m., 120 S. 6th Ave., Phoenix, AZ. Sponsor: Arizona Society of Pathologists. Contact: H.H. Karnitschnig, M.D., 120 S. 6th Ave., Phoenix, AZ. Approved for 1 hour per session category 1 credit.

Staff Education Conference

Wednesdays, weekly, 1 p.m., Arizona State Hospital, Phoenix, AZ. Sponsor: Arizona State Hospital. Contact: Howard E. Wulsin, M.D., Arizona State Hospital, 2500 E. Van Buren, Phoenix, AZ 85008. Approved for 1 hour per session category 1 credit.

BARROW NEUROLOGICAL INSTITUTE

Medical Education

Barrow Neurological Institute of St. Joseph's Hospital and Medical Center, 350 W. Thomas Road, Phoenix, AZ 85013. Sponsor: St. Joseph's Hospital & Medical Center. Contact: John R. Green, M.D. Approved for 1 hour category 1 credit.

Neurology Teaching Conference

Tuesdays, 8:30-9:30 a.m., Eighth Floor Conf. Room.

Neurosurgery Morbidity Conference

Wednesdays, 8:15-9:15 a.m., on first and third weeks, Eighth Floor Conference Room.

Neuro-ophthalmology Conference

Tuesdays, 11:30 a.m. in neuropathology conference room.

Spinal Injury Conference
Wednesdays, 8:15-9:15 a.m., on second and fourth weeks, in Neuropathology Conf. Room—a multidisciplinary review of admission by neurosurgeons, orthopedists, and rehabilitation specialists.

Neuropathology of Gross Specimens Conference
Thursdays, 7:30-8:30 a.m. in the Morgue.

Neurology-Neurosurgical Clinical-Neuroradiological and Neuropathological Conference
Fridays, 8-9 a.m., First Floor Conference Room.

Neuropathology or Neuroradiology Conferences
Fridays, 9 a.m., Neuropathology in Neuropathology Conference Room, Neuroradiology in First Floor Conference Room.

Neurorehabilitation Conference
Tuesdays, noon, 8th Floor Conference Room.

Neurosurgical Journal Club
Saturdays, 9-11 a.m., in Eighth Floor Conference Room.

CAMELBACK HOSPITAL

5055 N. 34th St., Phoenix, AZ 85018. Sponsor: Camelback Hospital. Contact: Medical Director.

Patient Staffing Conference
Three times weekly.

DESERT SAMARITAN HOSPITAL

Wednesday evenings, 7 p.m. Sponsor: Desert Samaritan Hospital. Contact: L.A. Rosati, M.D., Laboratory, Desert Samaritan Hospital, Mesa, AZ 85202. Approved for category 1 credit.

GOOD SAMARITAN HOSPITAL

Clinical Cancer Conference
3rd Wednesday, every month, Butler Bldg. Conference Room, Good Samaritan Hospital. Contact: John A. Bruner, M.D., 926 E. McDowell Road, Phoenix, AZ 85006. Approved for 1 hour per session category 1 credit.

GOOD SAMARITAN HOSPITAL

Pulmonary Disease Grand Rounds
Mondays, 12 Noon, D-5 North Conference Room, Good Samaritan Hospital, Phoenix, AZ. Sponsor: Pulmonary Disease Teaching Service, Good Samaritan Hospital. Contact: Bernard E. Levine, M.D., Pulmonary Function Laboratory, Good Samaritan Hospital, 1033 E. McDowell Road, Phoenix, AZ 85006. Approved for 1 hour category 1 credit.

MARYVALE SAMARITAN HOSPITAL

Continuing Medical Education Program
Maryvale Samaritan Hospital, every other Wednesday, 7-8 a.m., January 25, 1978 through December 27, 1978. Sponsor: Medical Staff of Maryvale Hospital. Contact: Richard C. Christensen, M.D. Approved for 1 hour per session category 1 credit.

MARICOPA COUNTY GENERAL HOSPITAL

2601 E. Roosevelt, Phoenix, AZ 85008. Sponsor: Maricopa County General Hospital. Contact: H.F. Lenhardt, M.D., Dir. of Medical Education. Approved for category 1 credit.

Total Joint Replacement
Oct. 27 & 28, 1978. Maricopa County General Hospital.

7th Annual Radiology Seminar "Pulmonary Diseases Part II"
Dec. 9 & 10, 1978, Camelback Inn, Scottsdale, AZ 85253.

Recent Advances in Geriatric Psychiatry
January 20, 1979. Maricopa County General Hospital.

5th Annual MCGH Urological Seminar
January 27 & 28, 1979. Doubletree Inn, Scottsdale, AZ 85251.

Current Advances in Obstetrics and Gynecology
Feb. 14, 15 & 16, 1979, Scottsdale Hilton Hotel, Scottsdale, AZ.

Medical Progress: A Review of Advances in Medicine in the Past 5 Years
Feb. 22, 23 & 24, 1979. Carefree Inn, Carefree, AZ 85331.

The Head presented by Department of Radiology, Feb. 9, 10 & 11, 1979. Doubletree Inn, Scottsdale, AZ 85251.

MEMORIAL HOSPITAL

1201 S. 7th Ave., Phoenix, AZ 85036. Sponsor: Memorial Hospital. Approved for category 1 credit.

Monthly Medical Education Seminar
Third Monday, 6:30 p.m., Kiva Conference Room. Contact: George Scharf, M.D.

Tumor Board Conference
Every Friday at Noon, Kiva Conference Room. Contact: Howard Kimball, M.D.

SCOTTSDALE MEMORIAL HOSPITAL

7300 E. 4th St., Scottsdale, AZ 85251. Sponsor: Scottsdale Memorial Hospital. Contact: W.S. Williams, M.D., Director o Medical Education.

Clinical Pathological Conference
4th Monday, monthly, 12:45 p.m.

Family Practice Conference
1st Monday, monthly, 12:45 p.m.

Medical Grand Rounds
3rd Monday, monthly, 12:45 p.m.

Morbidity & Mortality Conference
2nd Monday, monthly, 12:45 p.m.

ST. MARY'S HOSPITAL & HEALTH CENTER

1601 West St. Mary's Rd., Tucson, AZ 85703. Sponsor: St. Mary's Hospital & Health Center. Contact: see below.

Cardiology Conference
Every Friday 8-9 a.m., Century Room A. Contact: Anthony L. Forte, M.D.

Monthly Specialty Conference of the Department of Surgery
First Monday, monthly, 7:30 a.m., Century Room A. Contact: Medical Staff Office. Approved for 1 hour of category 1 credit.

Grand Rounds: Medical, Surgical, Family Practice, Pathology, Radiology
Weekly, Thursday, 7-8:30 a.m. Contact: Richard A. Silver, M.D. Approved for 1 hour category 1 credit.

U OF A HEALTH SCIENCES CENTER

Tucson, AZ 85724. Sponsor: U of A College of Medicine. Contact: See below Approved for category 1 credit.

Clinical Immunology, Allergy & Rheumatology Rounds
Every Friday, Noon-1 p.m. Contact: John Boyer, M.D., Dept. of Internal Medicine.

Cerebrovascular Disease Conference
Mondays, 5-6 p.m., weekly, Room 5505. Contact: Wesley Moore, M.D., Depts. of Surgery, Neurology & Radiology.

Dean's Clinical Rounds
October 18, 1978, Main Auditorium, UAHSC. Contact: Louis J. Kettel, M.D.

Endocrinology Seminar
Every Thursday, Noon-1 p.m., 1st, 3rd & 5th Thursday, Room N318, VA Hospital. 2nd & 4th Thursday, Room 6505, Tucson Medical Center. Contact: Dept. of Internal Medicine.

Hematology-Oncology Clinical Conference
Every Tuesday, Noon-1 p.m., 1st, 3rd & 5th Tuesdays, Room 6505, Tucson Medical Center. 2nd & 4th Tuesdays, Room N318, VA Hospital. Contact: Sidney Salmon, M.D., Dept. of Internal Medicine.

Joint Thyroid Clinic Conference
1st & 3rd Wednesdays of every month. AHSC, Rm. 6505. Contact: Sidney Werner, M.D., Dept. of Internal Medicine/ Endocrinology Section.

Medical Grand Rounds
Every Wed., Noon-1 p.m., 1st, 3rd & 5th Wed., Staff Conf. Room, VA Hospital. 2nd & 4th Wed., Room 5403, UAHSC. Contact: Jay Smith, M.D., Dept of Internal Medicine.

Nuclear Medicine
Thursday, 7:30 a.m., Radiology Conf. Room, UAHSC. Contact: Irwin M. Freundlich, M.D., Dept of Diagnostic Radiology.

Neurology Grand Rounds
Every Friday, Noon, 1st, 3rd & 5th Fridays, UAHSC, Room 7505. 2nd & 4th Fridays, VA Hospital. Contact: William A. Sibley, M.D., Dept. of Neurology.

Neuropathology Review Conference
Thursdays, 8:30 a.m., Room 5120, UAHSC. Contact: Peter C. Johnson, M.D.

Neurosciences Seminar
Every Friday, 7:30 a.m., UAHSC, Room 7505. Contact: Colin R. Bamford, M.D., or Jose F. Laguna, M.D., Dept. of Neurology.

Pathology Seminar
Friday, 4:30-5:30 p.m., Room 5120, UAHSC. Contact: Kenneth Ryan, M.D., Dept. of Pathology.

Tucson Pathologist Conference
First Monday of the month, 7:30-9 p.m. Rotation between Tucson Pathology Conf Rooms. Contact: Merel Clard, M.D., Tucson Pathologists.

Pediatric Grand Rounds
Every Tuesday, 12:30-1:30 p.m. Alternates between Tucson Medical Center & UAHSC. Contact: Hugh Thompson, M.D., Dept. of Pediatrics.

Problem Case Workshop
3rd Monday of each month, 7:30 a.m., Room 4410, UAHSC. Contact: H.E. Cross, M.D., Ph.D., Div. of Ophthalmology.

Psychiatric Grand Rounds
Every Wednesday, Sept. to May 4, 5:30 p.m., Room 8403 UAHSC. Contact: Alan Levenson, M.D., Dept. of Psychiatry.

Chest Radiology
Monday, 5-6 p.m., weekly, Room 1535F, UAHSC. Contact: Irwin M. Freundlich, M.D., Dept. of Radiology.

Gastrointestinal Radiology
Mondays, 7:30 a.m., weekly except for summer months. Contact: Irwin M. Freundlich, M.D., Dept. of Radiology.

Radiation Oncology Planning Conference
Friday, weekly, 8:30-10 a.m., UAHSC, Room 0655. Contact: Robert S. Heusinkveld, M.D., Radiation Oncology Section.

Radiology-Rheumatology Conference
Thursday, 8 a.m., UAHSC, Library Room 1535C. Contact: Irwin M. Freundlich, M.D., Dept. of Radiology.

Vascular Radiology
January-June 1978, 7:30 -8:30 a.m., every Friday. Contact: Irwin M. Freundlich, M.D., Dept. of Radiology.

Radiology Interesting Case Conference
Thursday, Noon, VA Hospital. Contact: Irwin M. Freundlich, M.D., Dept. of Radiology.

Resident's Conference
Wednesday, weekly 5-6 p.m., Diag. Radiology Conf. Room. Contact: Irwin M. Freundlich, M.D., Dept of Radiology.

Trauma Conference
Every Thursday, 4-5 p.m. UAHSC, Room 5505. Contact: Martin Silverstein, M.D., Dept. of Surgery.

Grand Ward Rounds—Trauma
Every Tuesday, 8 a.m., UAHSC. Contact: Martin Silverstein, Surgery Dept., Trauma Section.

Monthly Meeting Tucson Ultrasonography Group
First Wednesday of month, 4:30-5:30 p.m., UAHSC. Contact: Irwin M. Freundlich, M.D.

Tucson Urological Society Scientific Meeting
Monthly. Contact: George W. Drach, M.D., Depts of Surgery & Urology.

General Urology Conference
Tuesday, 5-6 p.m. Thursday, Noon-1:30 p.m., UAHSC Meeting Rooms & VA Hospital. Contact: George W. Drach, M.D., Dept. of Surgery/Urology Section.

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4th Thursday of 3rd Mo. (Mar., June, Sept. & Dec.), 1 p.m., T-5.

Dermatology Conference
1st, 2nd & 3rd Wednesday.

Hepathology Conference
2nd and 4th Tuesday, 1 p.m., 2128.

Gastroenterology Conference
1st and 3rd Tuesday, 1 p.m., T-5.

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GI Radiology Clinical Correlation Conference
Each Tuesday, 1 p.m., T-5.

Medical Surgical GI Conference
1st & 3rd Friday, 2 p.m., 2128.

Medical Service Grand Rounds
Each Friday, 11 a.m., T-5.

Surgery-Pathology Conference
Each Thursday, 7 a.m., 2128.

Urology-Pathology Conference
Each Wednesday, 7 a.m., 2128.

ArMA Medical History

Glendale Samaritan Hospital (Northwest Hospital) Glendale, Arizona

John W. Kennedy, M.D., Editor

The explosive population growth in the Phoenix area, during and following World War II created a hospital bed scarcity.

By 1950 there was little change in the bed capacity of the established hospitals in the valley. St. Monica's had been developed during WWII, Good Samaritan added a wing or so, St. Joseph's Hospital moved to a new plant on Thomas Road with a rated bed capacity of a few less than the old abandoned plant. St. Luke's was changing from a Sanatorium for Tuberculosis to a general hospital.

Physicians carefully nurtured staff appointments at all of the general hospitals in order to secure beds for their patients. One found it helpful to use hospital laboratory and x-ray services for their out-patients in order to help assure beds when needed. (One administrator made this the announced policy).

In 1958 the County Medical Society, the Health Planning Council, the Hospital Association, and County Health Services secured the assistance of A Hamilton Associates of Minneapolis, Minnesota, a consulting firm, to conduct a hospital survey of the Phoenix Metropolitan area. This was duly financed and reported back to the community but was never implemented and the community continued to have a bed shortage.

In 1959 it was proposed to the community of Glendale, Arizona, that they needed a hospital and this could be done by selling the bonds to supply the capital to put up the structure and secure the equipment. Byron Peck (a long time resident of Glendale and for many years mayor and member of the city council) was approached and he together with some other business people of Glendale were persuaded that this might be a method of getting a hospital for their community. At the time, there were about 30,000 people in Glendale and the adjacent area.

The capital required was set at $7,000,000, a bond office was set up in Glendale and the drive started. The first setback was a lack of interest of the people of Glendale to support the buying of bonds. However, bonds were sold and the hospital was started. Unfortunately, they found that during the construction phase there was some apparent mismanagement. As it turned out, the cooling system, the heating system, the x-ray apparatus and a lot of the medical and surgical equipment was not new but was surplus equipment or used equipment when installed and there followed a long travail of frequent breakdowns which further contributed to the economic instability of the hospital once it was opened to receive patients.

Finally on August 12, 1960, the hospital was opened for public guided tours of the "spacious 65-bed building". The description of the plant and the equipment as carried in the news releases of the time did not depict the true state of affairs.

It quickly became apparent to the Board of Directors that the financial situation was not good with a net loss of $30,402.00 after three months of operation.

In August 1961, the initial hospital administrator resigned and Mayor Byron Peck, President of the hospital board temporarily took over the administrative duties.

A bright note in the development of the hospital was the support of the Women's Auxiliary. In April 1960 the first organizational meeting of this group was held at the home of Mrs. Phillip Rice with Mrs. Rice, Mrs. Robert Easley and Mrs. Loy Roberts and Mrs. Hotsi Myauchi acting as hostesses. By April 1972, the auxiliary had raised and given to the hospital a total of $34,560.000 in the form of gifts in the eleven years of the existence of the hospital and had contributed over 60,000 hours of service.

During the sixties the hospital did not grow appreciably in size or in the volume of services it offered. Offers to enhance its growth were frustrated by the lack of solid community backing and inability to attract a larger medical staff. Furthermore, Maryvale Hospital, Phoenix Baptist Hospital, and Sun City Hospital (Boswell) opened their doors within a few months or years after Northwest Hospital was functioning. Each of these drew patients away from Northwest's location. At the same time John C. Lincoln Hospital further to the east developed a new and modern plant and this further decreased utilization at Northwest.

On August 13, 1969, Northwest Hospital merged with Samaritan Health Services. As a result of this merger, the Samaritan Health Service Board was expanded and six existing Northwest Hospital board members were added.

The sale of the hospital to the Good Samaritan Health Service was unique. Peck states that the bylaws of the Northwest Hospital stated that when the bonds were paid off the hospital would then become the property of the people of Glendale. The articles of incorporation indicated that the hospital could never be sold. It remains a non-profit corporation, and remains the property of the board of directors who represent the people of Glendale.

The story of Northwest Hospital is interesting and important for it ushered in a new method of financing hospital capital needs. This sale of bonds, most recently used by Northwest's parent, Good Samaritan Hospital to help finance its renovation and expansion goals.

Note: To Mr. Byron Peck the people of Glendale owe a debt of gratitude. His foresight and years of service saw the hospital through some severe financial crises. Other "eight-percenters", took the bankruptcy route — but not Northwest. **JWK**

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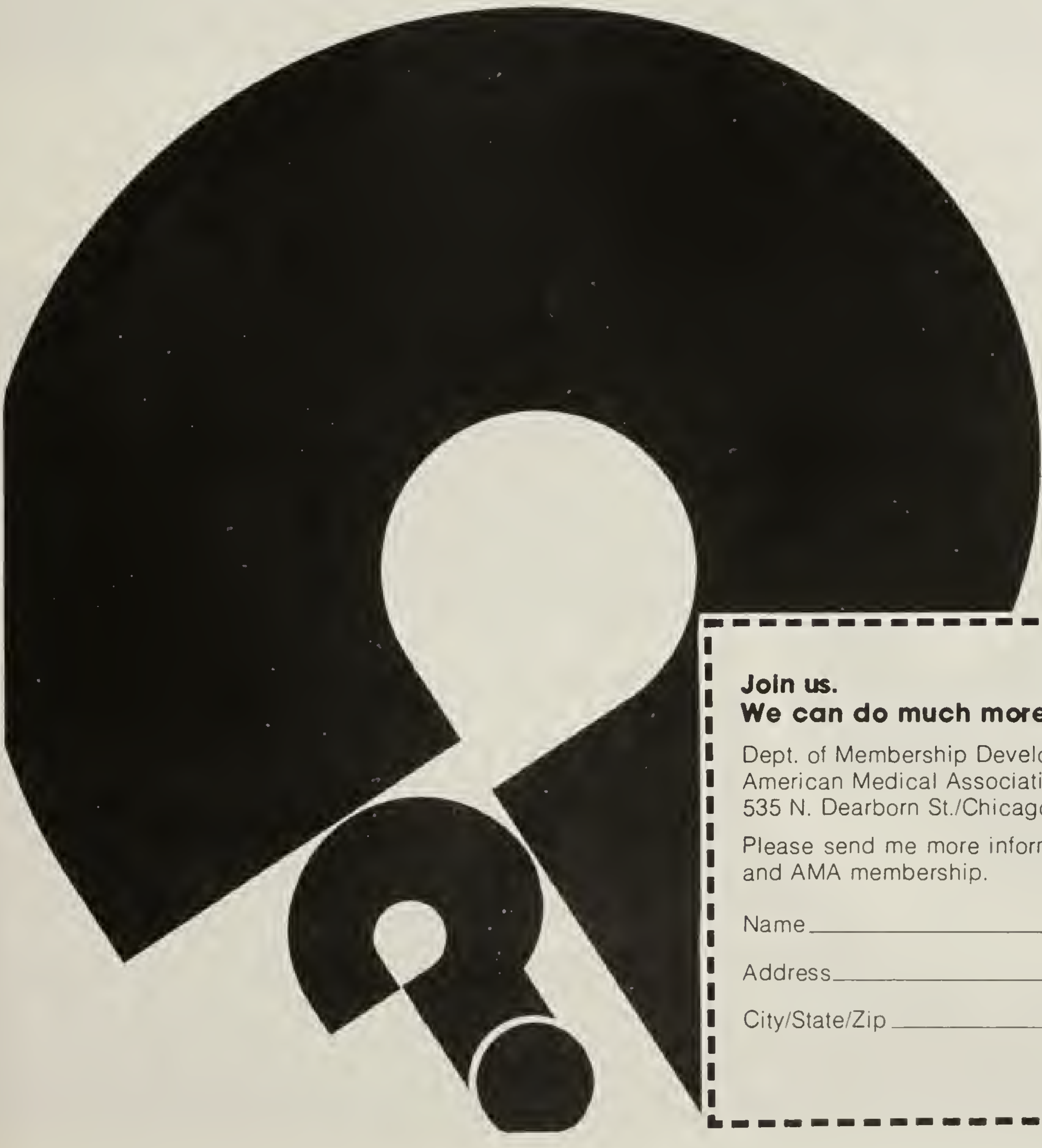

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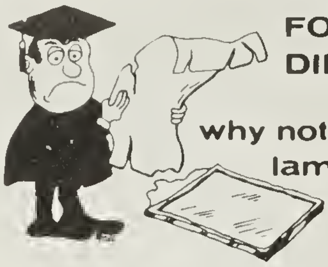

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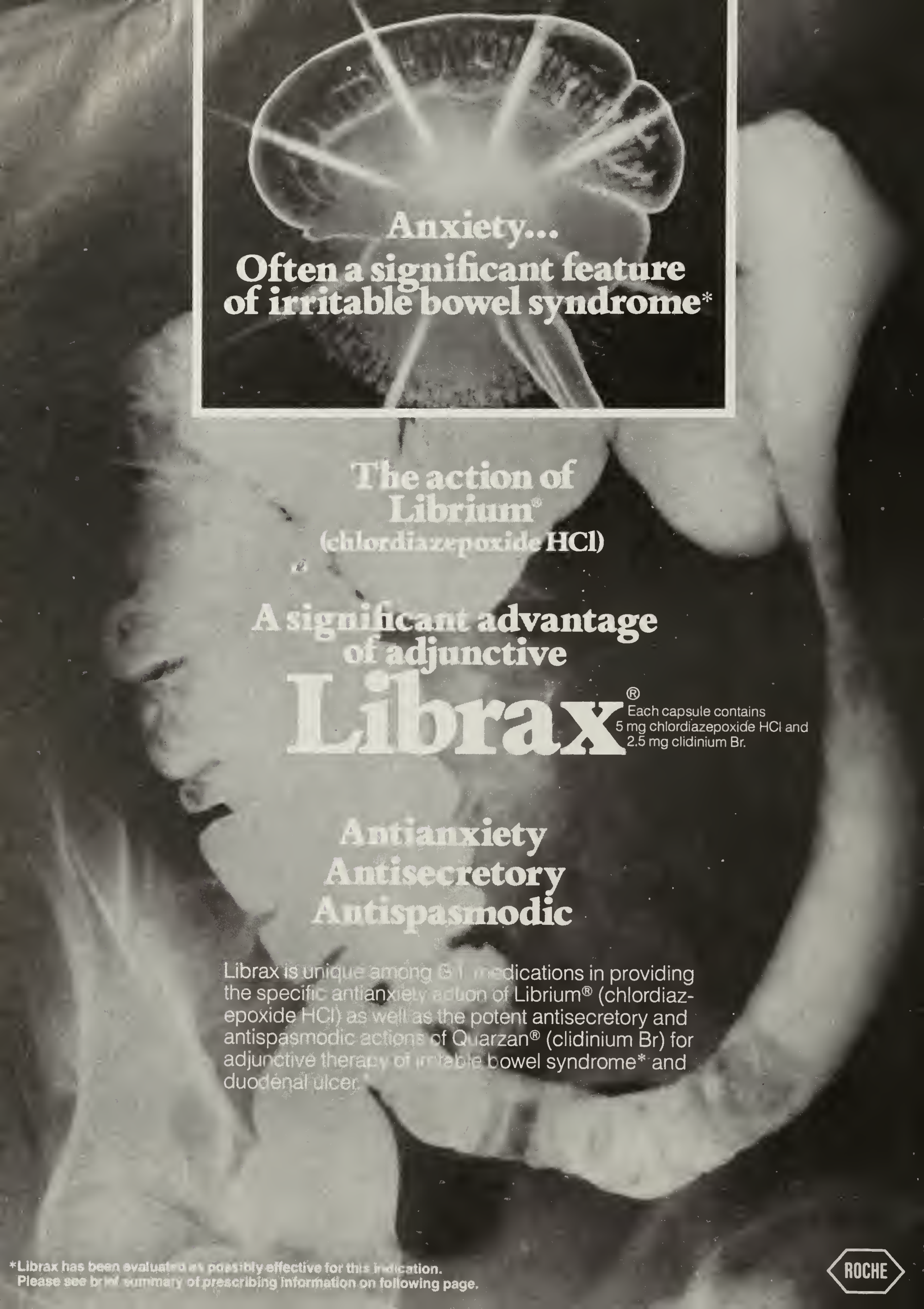

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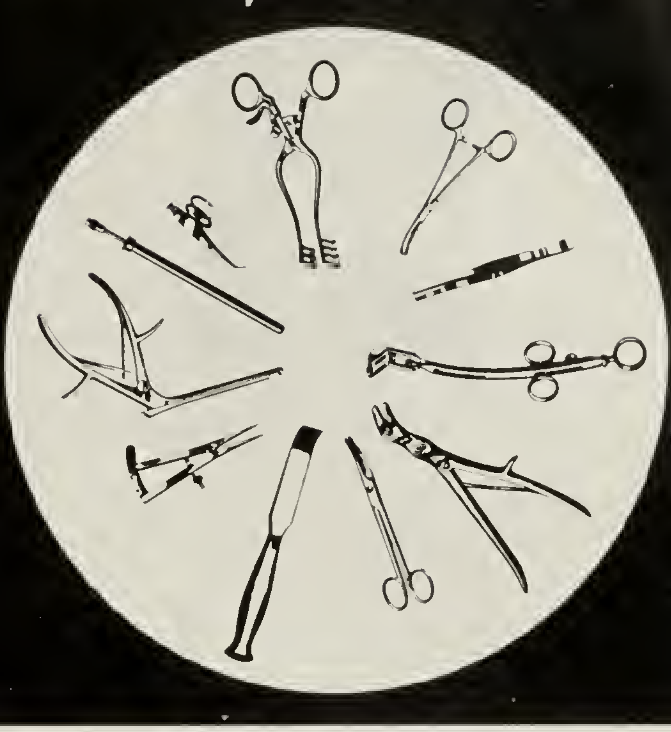

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Indications: Although the principal indication for cloxacillin sodium is in the treatment of infections due to penicillinase-producing staphylococci, it may be used to initiate therapy in such patients in whom a staphylococcal infection is suspected. (See Important Note below.)

Bacteriologic studies to determine the causative organisms and their sensitivity to cloxacillin sodium should be performed.

Important Note: When it is judged necessary that treatment be initiated before definitive culture and sensitivity results are known, the choice of cloxacillin sodium should take into consideration the fact that it has been shown to be effective only in the treatment of infections caused by pneumococci, Group A beta-hemolytic streptococci, and penicillin G-resistant and penicillin G-sensitive staphylococci. If the bacteriology report later indicates the infection is due to an organism other than a penicillin G-resistant staphylococcus sensitive to cloxacillin sodium, the physician is advised to continue therapy with a drug other than cloxacillin sodium or any other penicillinase-resistant semi-synthetic penicillin.

Recent studies have reported that the percentage of staphylococcal isolates resistant to penicillin G outside the hospital is increasing, approximating the high percentage of resistant staphylococcal isolates found in the hospital. For this reason, it is recommended that a penicillinase-resistant penicillin be used as initial therapy for any suspected staphylococcal infection until culture and sensitivity results are known.

Cloxacillin sodium is a compound that acts through a mechanism similar to that of methicillin against penicillin G-resistant staphylococci. Strains of staphylococci resistant to methicillin have existed in nature and it is known that the number of these strains reported has been increasing. Such strains of staphylococci have been capable of producing serious disease, in some instances resulting in fatality. Because of this, there is concern that widespread use of the penicillinase-resistant penicillins may result in the appearance of an increasing number of staphylococcal strains which are resistant to these penicillins.

Methicillin-resistant strains are almost always resistant to all other penicillinase-resistant penicillins (cross-resistance with cephalosporin derivatives also occurs frequently). Resistance to any penicillinase-resistant penicillin should be interpreted as evidence of clinical resistance to all, in spite of the fact that minor variations in *in vitro* sensitivity may be encountered when more than one penicillinase-resistant penicillin is tested against the same strain of staphylococcus.

Contraindications: A history of a previous hypersensitivity reaction to any of the penicillins is a contraindication.

Warning: Serious and occasionally fatal hypersensitivity (anaphylactoid) reactions have been reported in patients on penicillin therapy. Although anaphylaxis is more frequent following parenteral therapy it has occurred in patients on oral penicillins. These reactions are more apt to occur in individuals with a history of sensitivity to multiple allergens.

There have been well documented reports of individuals with a history of penicillin hypersensitivity reactions who have experienced severe hypersensitivity reactions when treated with a cephalosporin. Before therapy with a penicillin, careful inquiry should be made concerning previous hypersensitivity reactions to penicillins, cephalosporins, and other allergens. If an allergic reaction occurs, the drug should be discontinued and the patient treated with the usual agents, e.g., pressor amines, antihistamines, and corticosteroids.

Safety for use in pregnancy has not been established.

Precautions: The possibility of the occurrence of superinfections with mycotic organisms or other pathogens should be kept in mind when using this compound, as with other antibiotics. If superinfection occurs during therapy, appropriate measures should be taken.

As with any potent drug, periodic assessment of organ system function, including renal, hepatic, and hematopoietic, should be made during long-term therapy.

Adverse Reactions: Gastrointestinal disturbances, such as nausea, epigastric discomfort, flatulence, and loose stools, have been noted by some patients. Mildly elevated SGOT levels (less than 100 units) have been reported in a few patients for whom pretherapeutic determinations were not made. Skin rashes and allergic symptoms, including wheezing and sneezing, have occasionally been encountered. Eosinophilia, with or without overt allergic manifestations, has been noted in some patients during therapy.

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Children: 50 mg./Kg./day in equally divided doses q.6h. Children weighing more than 20 Kg. should be given the adult dose. Administer on empty stomach for maximum absorption.

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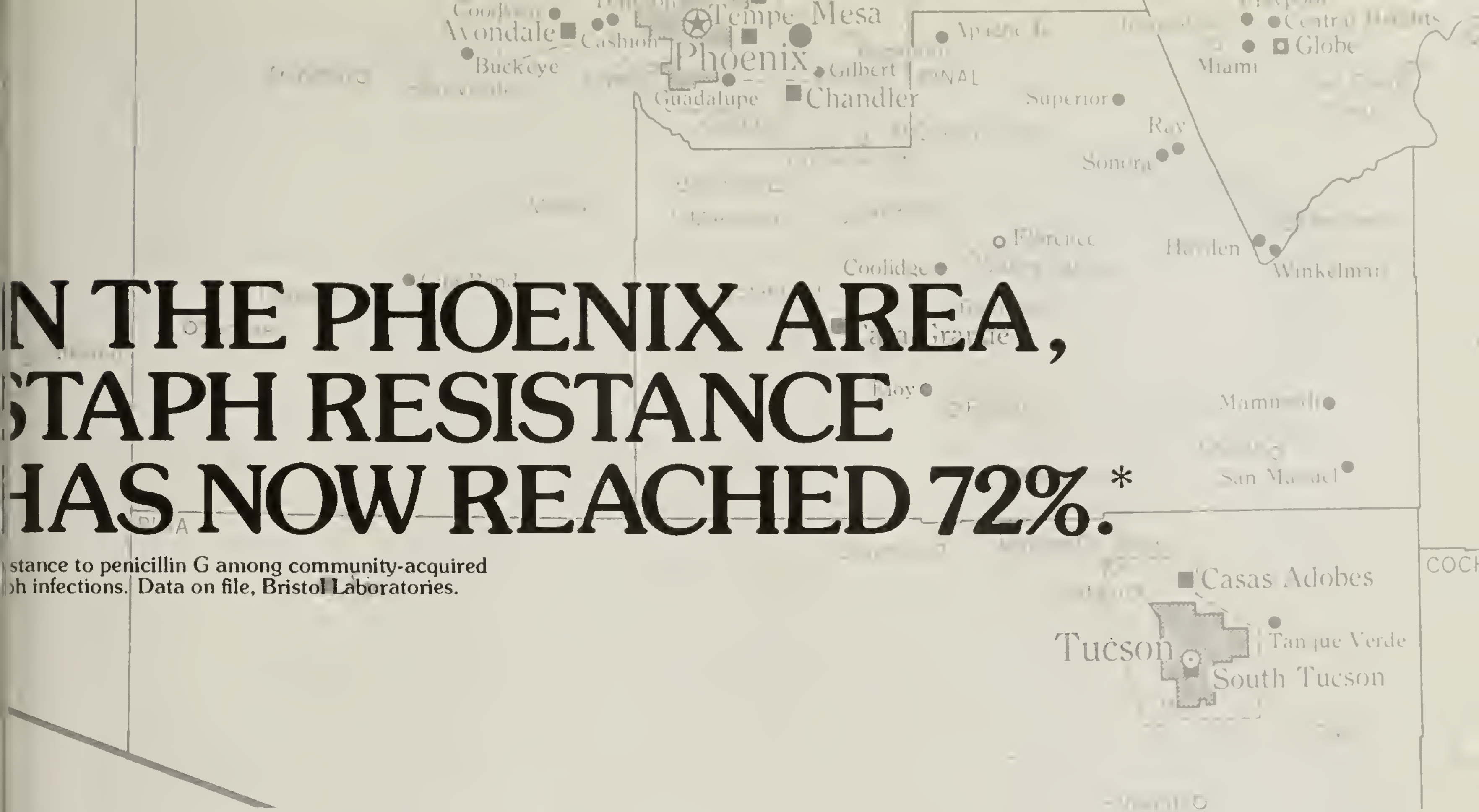

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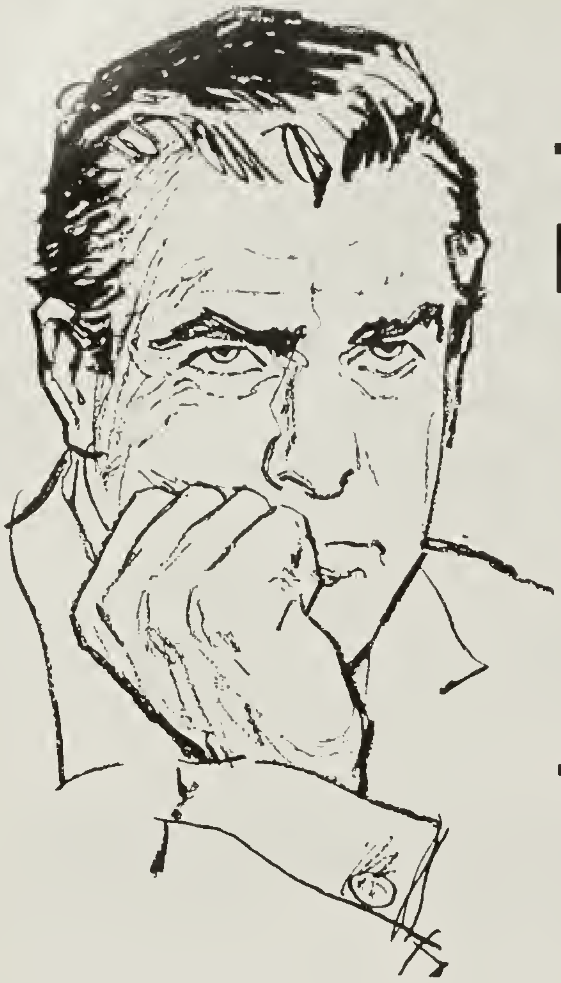

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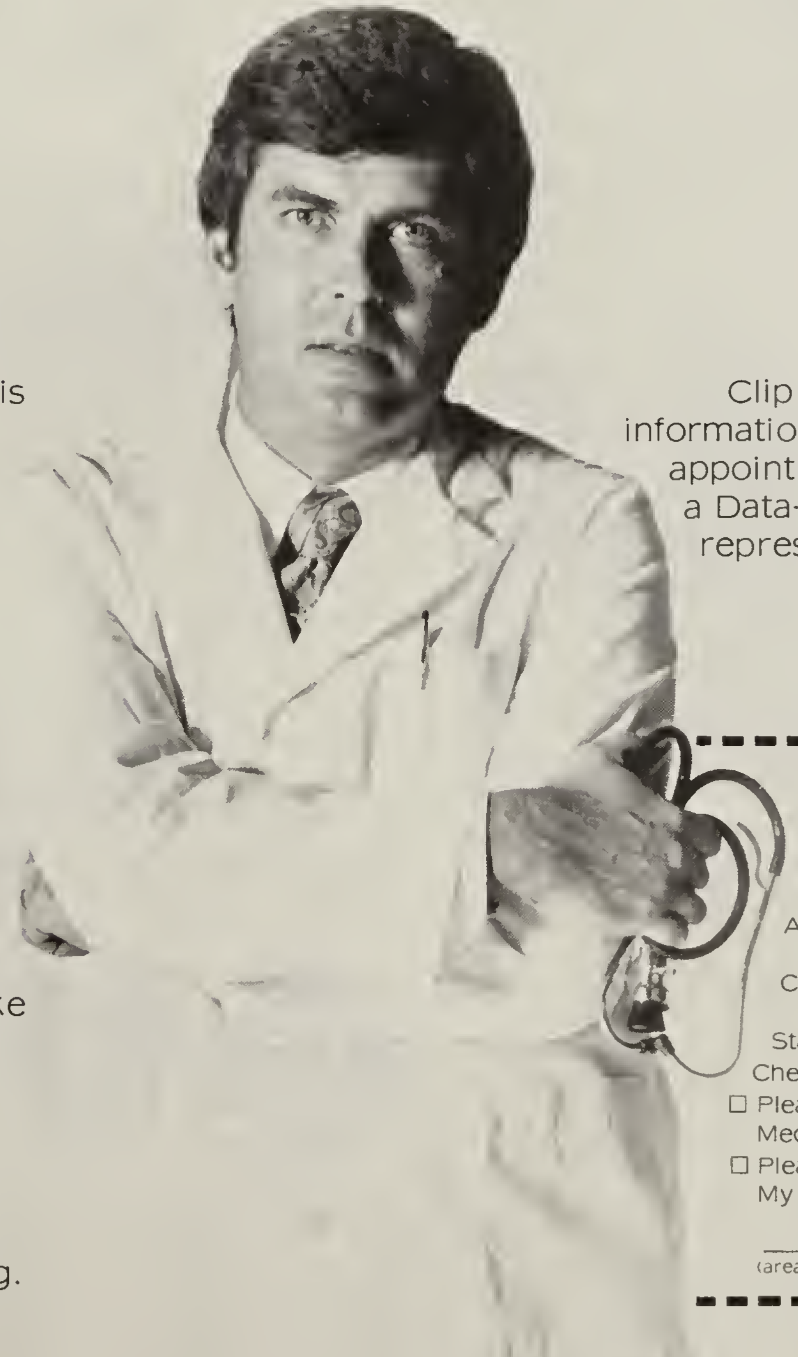

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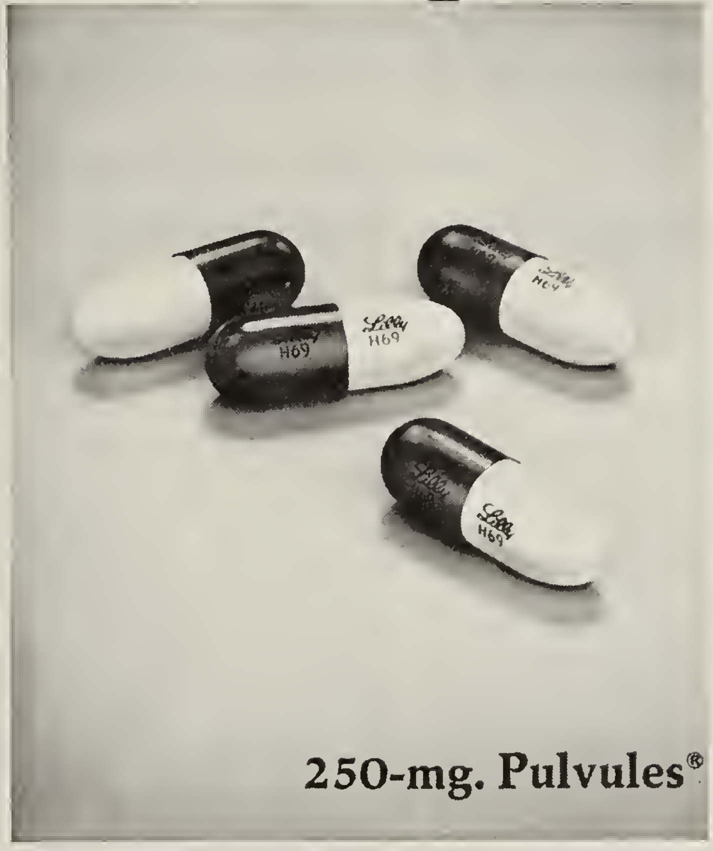

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THE CHICAGO DEPARTMENT OF HEALTH

NEWS LETTER

VOL. 18, NO. 1, MAY, 1978

AUTOMATIC BLOOD PRESSURE DEVICES

A Chicago Department of Health report on the Vita-Stat automated blood pressure machines concludes that their consistency and accuracy is sufficient for screening purposes.

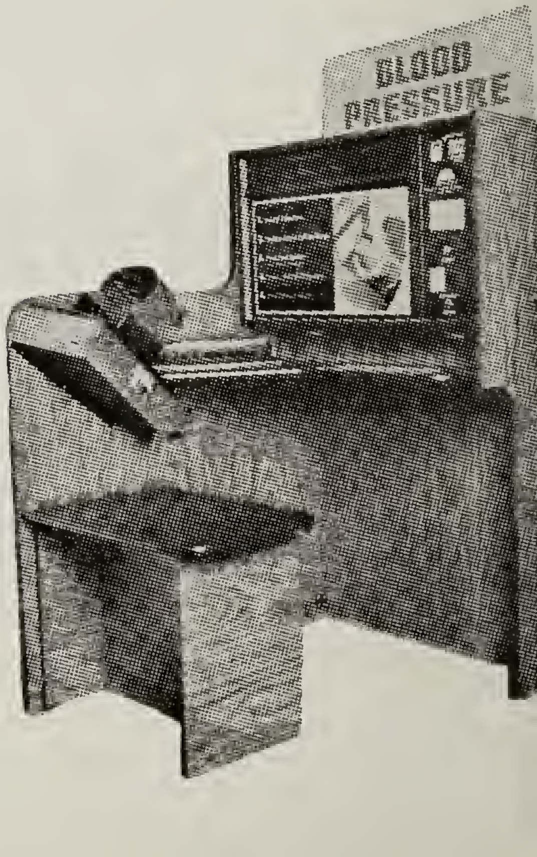
The report, the first in the nation based on a scientific study by a public agency, was prepared under the direction of Dr. David M. Berkson, the Department's heart disease control officer. It consists of (1) a statistical evaluation by Drs. Shekelle and Raynor of Rush-Presbyterian St. Luke's Medical Center, based on data collected over a four month period by Lawrence Shireman and Thomas Whipple and their co-workers in the Health Department, and (2) an evaluation of the results with recommendations for regulatory actions if deemed necessary. The report notes at the outset that any assessment of automatic blood pressure devices must compare their measurements with measurements by trained observers recorded by the traditional cuff ausculatory method. Since blood pressure may vary rapidly, the assessment of accuracy of measurement is difficult.

"In our evaluation of the Vita-Stat machine," the report states, "we found that, when the machine and a trained observer measure blood pressure simultaneously, there is a very good agreement." It is essential, however, that a machine must perform well in sequential measurement with trained observers as well as in simultaneous measurement. In sequential measurement the machine, in general, has a fair degree of accuracy. It does not perform as well, however, as trained technicians. In the laboratory analysis of the comparison between one machine and several technicians the machine tended to read systolic pressure 3.4mm higher and diastolic pressure 2.3mm lower. In the field analysis the machine tended to read systolic blood pressure 1.5mm and diastolic pressure 0.5mm higher than the technicians.

Although agreement between technicians in mean blood pressure measurement and in categorizing persons as normal, borderline or hypertensive tends to be closer than technician-machine agreement, these differences are small and of little practical significance in screening.

The report recommends that if licensing is insituted by the City of Chicago, periodic recalibration and testing should be required. The public must be informed that these instruments serve merely as screening devices; that they do not replace medical consultation and that, because blood pressure is subject to variation, several elevations or lack of elevations do not constitute a diagnosis of hypertension or normotension.

Blood pressure readings must be interpreted by a qualified medical professional and self-adjustment of medication based on automated blood pressure readings without medical supervision may be dangerous. The report concludes "that although the Vita-Stat machine does not perform as well as trained technicians, its consistency and accuracy is sufficient for screening purposes."



Seminars in Chest Medicine

Home Use of Equipment for Patients With Respiratory Disease

American Thoracic Society, medical section of American Lung Association. This is an official statement of ATS adopted by Council, February 1977.

Editors:
Robert J. Clark, M.D.
Lynn M.Taussig, M.D.
William C. Weese, M.D.

The continued, and at times unwarranted, proliferation of prescriptions for respirators, oxygen-delivery systems, and other respiratory equipment for use in the home provides grounds for considerable concern.[1,3] The guidelines offered in this statement are designed for physicians who prescribe respiratory devices and for third-party payers who need justification for the expense of filling these prescriptions.

General Requirements

In all situations in which respiratory equipment is prescribed for use outside the hospital setting, the physician should keep in mind the following principles.(1) Use the simplest and least expensive approach to achieve the desired therapy.(2) Provide for adequate training of the patient and home associates in the use of the therapeutic modality.(3) Reassess the situation at intervals to determine whether prescribed equipment is of value and is still needed.

Before respiratory therapy equipment is prescribed for home use, the patient's pathophysiologic problems must be assessed on the basis of clinical findings, including pulmonary function tests, and appropriate corrective measures for each abnormality must be determined. Simple and inexpensive measures such as adequate fluid intake, avoidance of tobacco smoke and other irritants, and appropriate medications and physiotherapy will usually result in an acceptable response, and mechanical devices will not be required.[4] If the patient fails to respond adequately to the basic therapeutic measures during a reasonable trial period, respiratory therapy equipment may be considered. It is then necessary to demonstrate that any equipment to be prescribed for domiciliary use does, in fact, correct or improve the problems when used in the intended environment. The patient or a responsible family member must demonstrate, after proper training, the ability and willingness to set up the equipment, to use it correctly, and to keep it clean and functional.

Once it is decided to provide the patient with domiciliary equipment, it is advisable to lease the device for an initial trial period before arriving at a decision, based on objective evaluation, including pulmonary function tests, as to the need for continuation of the therapy. The equipment must be prescribed by a physician, who should ensure that adequate orders are provided for the particular machine to be used, and that appropriate operating, cleaning, and sterilization instructions, drug dosages, and solutions are specified. Knowledgeable technical or nursing personnel must participate in providing a continuing program of training and observation to ascertain that the device is being used correctly and to report back to the responsible physician. A service company must be readily available to provide technical services and replacement of parts.

From: †This statement was developed to be of use to the American Lung Association's nationwide plan for the control of chronic obstructive pulmonary disease (COPD).

Reprinted from American Review of Respiratory Disease, Vol. 115, No. 5, May 1977.

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Equipment to Be Used

Domiciliary respiratory equipment to be considered includes humidification devices, nebulizers, respirators, suction apparatus, mechanical vibrators/percussors, and, rarely, other types of equipment used in respiratory support.

Humidification Devices

Possible indications. (*1*) Permanent tracheostomy. (*2*) Chronic sputum production, with difficulties in expectorating thick, tenacious, or copious secretions (e.g., cystic fibrosis, bronchiectasis). (*3*) Persistent airway irritation with chronic cough, with or without copious secretions.

Simple approaches. (*1*) Adequate fluid intake by mouth. (*2*) Postural drainage and instruction in how to cough. (*3*) Steam shower. (*4*) Simple room humidifier.

More complex devices (if simple approaches are unsuccessful). (*1*) Hospital humidifiers, powered by air or electricity. (*2*) Aerosol generators, powered by air or electricity.

Nebulizers

Possible indications. (*1*) Patients should have pulmonary function test evidence of airway obstruction, or evidence of difficulty in removing bronchial secretions. (*2*) The patient should demonstrate inability to derive expected benefit from simple devices listed previously.

Simple approaches. (*1*) Postural drainage and chest physical therapy with cough instructions. (*2*) Hand-bulb nebulizer. (*3*) Metered Freon® -powered hand nebulizer.

More complex devices (if simple approaches are unsuccessful, i.e., if the patient cannot cooperate or is too weak or uncoordinated to use a hand-bulb nebulizer or metered aerosol). (*1*) Air-compressor nebulizers. (*2*) Oxygen-compressor nebulizers are rarely required (except, for example, with patients who develop a significant decrease in arterial P_{O_2} with air-driven nebulizer). (*3*) Ultrasonic or hydrosphere compressors.

Respirators

(*1*) Patient has unstable hypoventilation with CO_2 retention, which can be reduced or prevented from rising by frequent mechanical assistance.[4] (*2*) Patient requires intermittent or constant use of assisted or controlled ventilation to maintain adequate respiration because of a chronic hypoventilation (e.g., myasthenia gravis, bulbar polio, spinal cord injury).

Simple approaches. (*1*) Adequate humidification, adequate fluid intake, postural drainage, chest physical therapy. (*2*) Voluntary deep breathing exercises.[5,6] (*3*) Hand-bulb or mechanically driven nebulizers.

More complex devices (if simple approaches are unsuccessful). (*1*) Devices that augment inspired volume (e.g., incentive spirometer).[7] (*2*) Electrically driven pressure respirators. (*3*) Gas-driven pressure respirators. (*4*) Volume ventilators. (*5*) Negative pressure ventilators or other devices (such as rocking beds) to improve breathing patterns (occasionally indicated).

Suction Apparatus

Possible indications. (*1*) Patients with permanent tracheostomies, laryngectomies, or other anatomic problems in the major airways. (*2*) Patients requiring continuous ventilator support. (*3*) Patients with neurologic problems causing recurrent aspiration. (*4*) Patients with chronic secretion retention, such as those conditions outlined under "Humidification Devices."

Simple approaches. (*1*) Suction apparatus connected to water faucet.

More complex devices. (*1*) Mechanical (electrical) suction machines. (**2**) Wall suction systems (e.g., in nursing homes and extended care centers).

Mechanical Vibrators/Percussors

Possible indications. (*1*) Patients with conditions outlined under "Humidification Devices" and "Suction Apparatus." (2) Patients whose attendants or family are incapable of providing manual percussion/vibration.

Special Situations

There will occasionally be additional circumstances in which a physician may recommend the use of mechanical devices in the home. In such cases, recommendations should be based on objective as well as subjective evidence.[4] The physician should be prepared to develop a report for third-party payers outlining the special circumstances, with comments on the clinical situation and the available laboratory data, that led to the belief that respiratory equipment is required by the particular patient.

This statement was prepared by the ATS Respiratory Therapy Committee. The committee members are as follows:

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Seminars in
Gastroenterology
and Liver Disease

Experience With the LeVeen Valve Shunt

Peter J. Whitney, M.D., F.A.C.S.
Bruce A. McDonald, M.D.
Eric G. Ramsay, M.D., F.A.C.S.

Editors:
Leon Rigberg, M.D.
Stephen Glouberman, M.D.
George Burdick, M.D.

The Tucson Hospitals Medical Education Program is a hospital-based educational system primarily for graduate and continuing education. Through affiliation with the University of Arizona College of Medicine, it is also involved in pre-doctoral teaching to a lesser degree. This paper summarizes the experience in Tucson, Arizona among the attending surgeons and residents in this program with the LeVeen shunt procedure first described in 1974. The world-wide experience with this mechanical method of treating ascites is now over six hundred.[1] This paper discusses the experience with eleven patients operated on by six private surgeons and the teaching cases of this program.

Our first shunt was performed in June of 1976. The most recent was performed in December 1977. The oldest shunt still functioning is seventeen months. The *indication* was sterile, otherwise intractable ascites. The contraindications to this shunt are a bilirubin in excess of 10 mg. percent; an infected ascites; and failure of the kidneys to respond to volume expansion with colloid and crystalloid, or to appropriate diuretics.

Preoperative preparation consists of inspiring against a 5 cm. water pressure resistance four times a day, salt restriction, potassium repletion, correction of coagulation defects, red blood cells as necessary, Lasix 40 mg. four times a day, and Methacillin or other penicillinase resistant penicillin preoperatively.

The operative procedure performed by us is essentially the same as that described by Dr. LeVeen.[1] We use local anesthetic and introperitoneal irrigation and wound field irrigation of Gentamycin solution, and continued Methacillin. The technical points of the operation are: a water tight seal of the peritoneum and fascia around the valve stem; a tight fitting tunnel around the venous-end tubing; infiltration of the clavicular fascia with sharp incision; and proper fashioning of the venous-end tubing so the end lies in the superior venacava. At present the vein of choice in the neck is the internal jugular vein. The operation is most frequently performed on the right side.

Five of eleven patients suffered shunt *failure*. Three of that five had shunt *replacement* carried out *once*. One of that five had shunt *replacement* carried out *twice*. The failures were all due to plugging of the valve except two, which were infected.

Of the eleven patients the youngest was fourteen and the oldest 85. There were seven females and four males in the series. Ten patients were of the white race and one was of the black race.

Six patients had the diagnosis of ascites secondary to alcoholic cirrhosis. In three, the diagnosis was postnecrotic cirrhosis. In one, it was cirrhosis due to radiation hepatitis. In one it was cirrhosis secondary to chronic, active hepatitis.

In eight of eleven patients, a weight within the last several months is available. All patients have demonstrated a loss of weight and girth as long as the shunts have continued to function. In none has there been a problem with fluid overload. Weight loss has ranged from a low of 6 kilograms (13 lbs.) to a high of 16 kilograms (36 lbs.). Nine of eleven have required some continuing salt and diuretic managementas well as abdominal support.

The impression from this small series of patients is that there is a place for this operation in the armamentarium of the surgeon treating patients with ascites. In those with alcoholic cirrhosis and ascites, it is possible to perform this operation with little operative morbidity and mortality: none of our series were an operative death (defined as a direct consequence of the operation of whatever time interval or within thirty days). The only death was due to variceal bleeding in a patient who continued to drink. It is noteworthy that the alcoholics who continued to drink lost the least weight and suffered the most complications.

From: Craycroft Medical Center, Ste. 405, Craycroft & Second St., Tucson, AZ 85711. Reprint requests to Dr. Whitney.

Diagnosis	Age	Sex	Race	Shunt	Re-Shunt	Months Since Operation	Results
Post Necrotic Cirrhosis	14	♀	W	L Internal	R Internal	15 (second)	16 lbs. weight loss
Alcoholic Cirrhosis	34	♀	W	R Internal	R Internal	12 (second)	36 lbs. weight loss Shunt removed for infected ascites
Post Necrotic Cirrhosis	37	♀	W	R External	None	9	Infected ascites — Shunt removed
Chronic Active Hepatitis	42	♀	W	R Internal	None	4	16 lb. weight loss
Alcoholic Cirrhosis	44	♂	W	R Internal	None	6	30 lb. weight loss
Alcoholic Cirrhosis	45	♀	B	R Internal	None	4 (survival)	Died from variceal hemorrhage
Alcoholic Cirrhosis	52	♀	W	R Internal	Kink Revised	10	22 lb. weight loss
Alcoholic Cirrhosis	54	♀	W	R Internal	None	17	13 lb. weight loss
Alcoholic Cirrhosis	55	♂	W	R External	R External, Then R Internal	10 (third)	15 lb. weight loss
Radiation Hepatitis, CA R Kidney	76	♂	W	R External	L Internal	3	22 lb. weight loss
Post Necrotic Cirrhosis	85	♂	W	R External	None	8	? Weight

In other types of ascitic patients, the operation is in general successful. The risk of disseminating malignancy in malignant ascites is obvious and must be evaluated. Immediate weight loss seems to be predictive of whether the shunt will remain open. If weight loss is rapid and considerable, the shunt will usually stay open.

DISCUSSION

According to LeVeen,[2] one of the major contributing factors to ascites is hepatic venous outflow obstruction. Starling's Law demonstrates that protein rich fluid is driven out into the peritoneal cavity from the surface of the liver. The hepatocytes are not protein impermeable, hence weeping from the surface of the liver occurs as well as from other peritoneal surfaces. Ascites is usually a late complication in a severely deranged liver. The majority of ascitic patients die from renal failure, according to LeVeen.[3]

Medical management usually is successful but may cause hypovolemia, hyponatremia, oliguria and azotemia. The literature presently suggests that improper use of diuretics is at least one cause of the "hepatorenal syndrome."

In 1962 Kaiser, Lampke, et al reported the intravenous infusion of ascitic fluid for repletion[4] and in the same year Smith, Pressau and Bisset of Edinburgh reported a modified Holter valve drainage of ascites.[5] In 1967, Eisemann[6] reported a peritoneal-atrial shunt and subsequently Waddell used a modified Newkirk valve via the saphenous vein for drainage of ascites in eight patients.

Dr. LeVeen introduced his valve in 1974 and at present the experience is extensive with this mechanical method. The operative complications reported are: postoperative wound hemorrhage; valve failure; peritonitis; wound infection; ascitic fluid leakage and dissemination of carcinoma. Patients who have borderline heart failure may be unmasked by the volume expansion and represent a specific risk. Renal failure not corrected by this method may require dialysis.

It is wise to avoid placing a valve, then attempting full-scale medical management, since the valve depends on ascitic flow. Long term salt restriction is usually not necessary. Some diuretic management, at least initially, usually is necessary.

In our opinion, this procedure does not replace the medical management of ascites, but it may replace portocaval shunting for the surgical management of this condition. This shunt does nothing at all about the hazards of variceal hemorrhage and indeed may precipitate it.

SUMMARY

Eleven cases of LeVeen valve shunts are presented. An analysis of diagnoses, demographic parameters and results are reviewed. Some commentary on the use of this adjunct is offered.

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Seminars in Endocrinology
and Metabolism

Hyperparathyroidism

Michael Barsotti, M.D.

Editors:
Stephen E. Dippe, M.D.
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Primary hyperparathyroidism is not an uncommon endocrine disease with an incidence of about 1 case per 1000 in a clinical population. At Maricopa County General Hospital, between six and eight new cases are seen each year. A few of these patients are discovered because of symptomatic disease (Table 1), but the majority are discovered because of an elevated serum calcium found on automated screening chemistries. Unfortunately there is no one laboratory test that distinguishes this group of hypercalcemic patients from those patients with non-parathyroid hypercalcemia or ectopic secretion of parathyroid hormone (PTH), and consequently several laboratory studies and radiographic procedures must be done to make the distinction. In patients with ectopic PTH secretion, the diagnosis is one of exclusion since ectopic PTH hormone may significantly crossreact both immunologically and biologically with parathyroid PTH and a search for an occult neoplasm must be made; whereas, in patients with primary parathyroid disease or non-parathyroid hypercalcemia, measurement of the serum concentration of PTH or the metabolic effects of PTH can separate these two groups of patients since in the former there is an inappropriate secretion of PTH with respect to the serum calcium and in the later PTH secretion is suppressed by the hypercalcemia.

The most important test in patients with asymptomatic hypercalcemic is the serum calcium itself. This may seem ironic, but automated techniques that are employed for the routine measurement of the total serum calcium have a significant degree of error and should not be considered as abnormal unless the calcium is greater than the 99% confidence level for a given normal population. For example, in our laboratory the normal range for the total serum calcium is between 8.5 and 10.5mg%. We do not consider the hypercalcemia in an asymptomatic patient to be significant unless several values are greater than 10.9mg%. In those patients who have a serum calcium greater than 10.9mg%, even though they are asymptomatic, a neck exploration for parathyroid disease should be undertaken if they are a reasonable operative risk. Since, when sensitive studies for metabolically active bone disease or nephrolithiasis are done, there is little dif-

TABLE I
COMPLICATIONS OF PRIMARY HYPERPARATHYROIDISM

RENAL STONES
NEPHROCALCINOSIS
OSTEOPENIA AND BONE FRACTURES
PEPTIC ULCER DISEASE
PANCREATITIS
MUSCLE WEAKNESS
PSYCHIATRIC
HYPERTENSION
METASTATIC CALCIFICATIONS

From: Maricopa County General Hospital, 2601 E. Roosevelt, Phoenix, AZ 85008.

ference between them and those patients with symptomatic stone or bone disease. In those patients with a borderline elevation of the total serum calcium (values between 10.5 and 10.9mg%) and are asymptomatic for parathyroid disease, we follow them with a serum calcium at four to six month intervals and do not undertake a complete investigation unless their calcium becomes significantly elevated since the majority of these patients will remain asymptomatic. In patients who have had symptoms suggestive of parathyroid disease and only have a borderline elevation of the serum calcium, it is quite a different matter and a more aggressive approach should be made. In these patients, a measurement of the serum ionized calcium much more accurately defines a hypercalcemic population than does the total serum calcium and if the serum ionized calcium is elevated, then further investigation is undertaken.

Normally there is a negative relationship between serum calcium and the PTH concentration; whereas, in primary hyperparathyroidism the higher the PTH level the greater the serum calcium concentration (Figure 1). This hypersecretion of PTH leads to an increased tubular reabsorption of calcium, increased activity of the one alpha hydroxylase enzymes in the kidney that increase the synthesis of 1, 25 dihydroxycholecalciferol (1, 25 DCC) with subsequent increased gut absorption of calcium, and together with 1,25 DCC increased bone resorption — all three factors increasing the serum calcium concentration. In addition to these effects, PTH also decreases the renal tubular absorption of both phosphate and bicarbonate leading to hypophosphatemia and a hyperchloremic acidosis respectively. The hypophosphatemia also increases the one alpha hydroxylase enzyme systems in the kidney as well as increases bone resorption, further contributing to the hypercalcemia.

In our experience, we have found a significant number of patients with surgically proven primary parathyroid disease to have PTH concentrations that overlap with normals (Figure 1). Likewise, there can be an overlap of the serum PTH concentration between primary hyperparathyroidism and non-parathyroid hypercalcemia., At lower concentrations, the immunoassay for parathyroid hormone is insensitive and as a result, even though the PTH is suppressed in non-parathyroid hypercalcemia, it cannot always separate these two groups of patients. When the PTH is non-diagnostic, other tests that can give direct evidence of parathyroid disease become very important.

Tests that measure the effects of PTH rather than the serum concentration can often separate primary hyperparathyroidism from non-parathyroid hypercalcemia when the PTH cannot. One such test is the ratio of chloride to phosphate in the serum. In general the chlorides are higher and the phosphates lower in primary hyperparathyroidism than in non-parathyroid hypercalcemia. When expressed as a ratio of chloride to phosphate, it gives a much better distinction than either value by itself. A ratio of greater than 33 is usually indicative of primary hyperparathyroidism; whereas, a ratio of less than 33 suggests non-parathyroid hypercalcemia. A second test is the nephrogenous cyclic AMP. The effects of PTH on the kidney are mediated through cyclic AMP which accounts for the majority of cylic AMP that is secreted into the urine. Since PTH secretion is increased in primary parathyroid disease and suppressed in non-parathyroid hypercalcemia, the urinary cyclic AMP will give good separation of these two groups when the measurement of PTH itself cannot. Another test recently described in the literature that can be easily done in most laboratories is the hypercalcemic discrimination index (HDI). Essentially it is a calculation that takes advantages of the metabolic effects of PTH on calcium and phosphate metabolism. A value is calculated by multipling the 24 hour urinary secretion of calcium, times the serum phosphate, times a hundred and dividing this value by the creatinine clearance times the serum calcium. A value of less than 137 is indicative of primary hyperparathyroidism. These three tests the ratio of chloride to phosphate, the neoprogenous cyclic AMP, and the HDI can often separate primary hyperparathyroidism from non-parathyroid hypercalcemia when the serum PTH concentration cannot. It is important to re-emphasize that because of the immunologic and biologic overlap between ectopic PTH and parathyroid PTH, neither measurement of PTH or its metabolic effects are of use in diagnosing an ectopic source of PTH and its diagnosis remains one of exclusion.

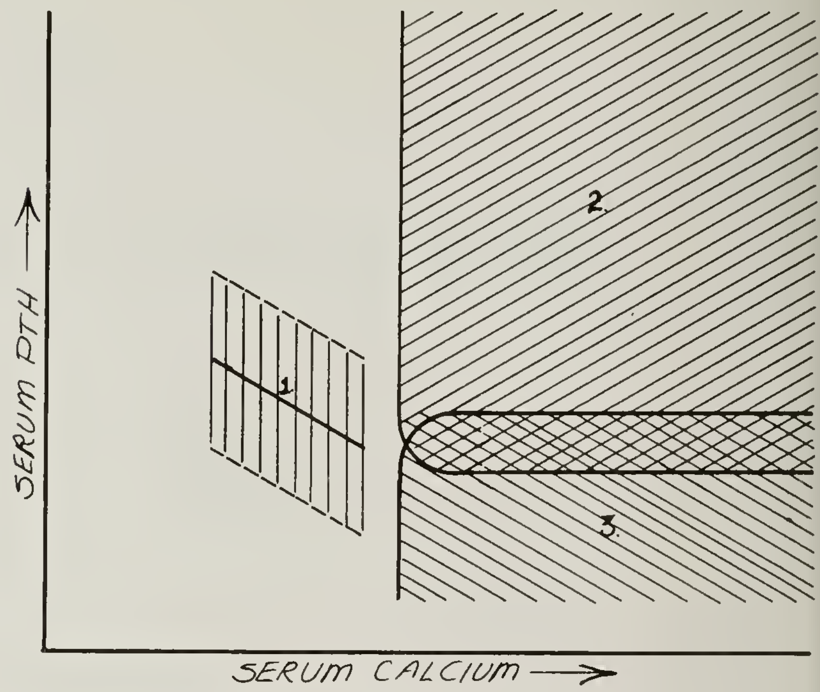

Figure 1
Relationship of the serum calcium to parathyroid hormone (PTH) in normals (1), in patients with primary hyperparathyroidism or ectopic secretion of PTH (2), and in patients with non-parathyroid hypercalcemia (3). Note the overlap of PTH between patients in group 2 and those in group 3, and each of these groups with normals.

A recent test used in diagnosing parathyroid disease is neck vein catheterization. Through a catheter, blood samples are drawn from the thyroidal and large neck veins and assayed for PTH. A step-up in PTH concentration at one site will localize the parathyroid adenoma; whereas, an increase of PTH above peripheral concentrations at multiple sites suggests hyperplasia. Because of the expense and time necessary to perform this procedure and the excellent chance that an experienced surgeon can locate the parathyroid adenoma or identify hyperplasia at the first operation, it is generally reserved for those patients who have been diagnosed as having parathyroid disease and who have undergone a prior negative neck exploration. When combined with selective arteriography, both disease in the neck and mediastinum can usually be accurately located and lead to a successful re-exploration. We have also used this technique to diagnose primary parathyroid disease when two or more causes of hypercalcemia may coexist. In these patients, the step-up in blood concentration of PTH both localizes and diagnoses the disease.

In evaluating the hypercalcemic patient, there is no single test that will give the correct diagnosis and before the evaluation is undertaken, the elevated serum calcium must be well documented, especially in the asymptomatic patient. The measurement of the PTH is only an adjunct to the other laboratory studies. A high PTH concentration does not mean that a neck exploration will be successful, nor does a normal level mean that it will be unsuccessful. Often measuring the metabolic effects of PTH rather than its concentration give more useful information and a clearer separation of primary hyperparathyroidism and non-parathyroid hypercalcemia when the PTH cannot. Likewise, since tests like the chloride to phosphate ratio or HDI are less expensive and more readily available to most physicians than is the PTH assay, they can be used in place of PTH in the evaluation of hypercalcemic patient.

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Obstetrics and Gynecology

Genital Herpes

Part II

Julia M. Luce, M.D.
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Neonatal Herpes

To date all studies have suggested that the most common route of infection of the newborn has been through contact with active virus particles from the maternal cervix or vagina during delivery. The risk factor to the newborn if the mother has active lesions at the time of delivery is unknown. The seriousness of herpes infections in the newborn period may be related to whether the not the infant has transplacental antibodies resulting from prior maternal infection. If this is true, there is certainly more concern warranted if the mother's infection is primary in nature. Neonatal infection is very frequently fatal, or may result in severe visual, auditory, or neurological sequelae. Recent research has challenged the wisdom of utilizing caesarean section in cases other than primary infection. The question as to whether the risks involved with this procedure exceed those involved with infant infection during the birth process in women with possible secondary infection has not yet been resolved one way or the other.[4]:[7]

From: Arizona State University, Dept. Health Services, Tempe, AZ 85282.

Herpes Simplex and Cervical Carcinoma

In 1974, Rawls, *et al.*, reviewed the many studies done prior to that time on the relationship of genital herpes and carcinoma of the cervix.[8] Essentially, these studies demonstrate a clear-cut difference between the antibody titers of herpes II in women with cervical cancer and carefully controlled groups of women without cervical cancer. Study groups with cervical carcinoma were found to have significantly higher titers of herpes II than control groups. No significant differences were noted between groups in terms of syphilis serologies or the incidence of other venereally transmitted diseases.

Prevention

The need to plan programs to reverse the existing trend of increasing numbers of genital herpes cases is evident. Yet, the problems to be faced are formidable. As with other venereal diseases, public information programs have to date been very low key, and not easily available to the population at greatest risk — the young. A recent survey[6] of university students, supposedly the most sophisticated of youth samples, indicated that few students were aware of important aspects of the disease such as its incurability, relationship to neonatal damage, and association with cervical cancer. An impressive number of students had never even heard of genital herpes. Yet university affiliated health service centers are reporting that during the past year they have diagnosed more cases of genital herpes than syphilis and gonorrhea cases combined.

The sudden explosion of genital herpes on the scene has caught many physicians in an information lag. A number of students have reported to the writers that their physicians did not explain to them the need or method to protect others from this disease, or the possible complications with regard to childbirth and cancer.

A current review of the literature and a poll of published researchers in the field find a concenses in the following prevention recommendations:

1. In order to prevent transmission from a person with active disease to another individual, careful avoidance of direct contact with the active lesions is essential.

2. Since there is evidence that, following primary infection, active virus can be present in the absence of detectable lesions, it is probably advisable to recommend regular use of a condom and/or contraceptive foam. Research does indicate that contraceptive foams are viricidal.[10] Indeed, it may well be that the swing away from the use of condoms and spermicidal chemicals in favor of the birth control pill and IUD has been the most significant factor in the sudden upsurge of genital herpes infections.

3. Since infants born to mothers with active disease are at risk of contracting infection during passage through the birth canal, consideration of caesarean section is indicated in such patients. There is evidence that this consideration may not be warranted if rupture of the membranes has occurred more than a few hours prior to detection of the genital infection.

4. It is important that annual medical follow-up and pap tests be maintained for women with a history of genital herpes, especially those with known involvement of the cervix.

5. The population at greatest risk appears to be our youth. Increased efforts at disseminating relevant information about genital herpes should be undertaken.

Conclusions and Implications

A devastating disease that has serious implications in terms of neonatal infection and cancer has been described. Genital herpes shows evidence of reaching epidemic proportions among sexually active youth who have relations with multiple partners. While educational programs in an area as emotionally charged as sexual mores may be challenged, it appears to the authors to be a necessary step in resisting the disease successfully. Experience with university students has led us to believe that young people are concerned, and do benefit from factual information when it is presented in an objective, straightforward, non-judgmental manner. It appears to us that a concerted effort to create awareness must be undertaken by physicians and by agencies concerned with public health.

Actual statistics on the incidence of genital herpes in this country are difficult to find. In most areas it is not a reportable disease. Arizona added genital herpes to its list of reportable diseases at the beginning of this year, and is attempting to accumulate statistical information on incidence and other pertinent parameters. It would appear to us that further surveys in venereal disease clinics, private gynecological clinics, and student health facilities might help clarify the actual incidence of genital herpes, and critical factors influencing the apparent current increase in prevalence.

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Oncology

Chemotherapy of Disseminated Testicular Cancer

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Editors:
Stephen E. Jones, M.D.
Robert H. Thoeny, M.D.

EDITOR'S NOTE: For this month's column, I have solicited a review article from outside of Arizona because of the particular expertise of the two authors, Dr. Williams and Dr. Einhorn at Indiana University, in the management of patients with testicular cancer. Over the last year, we have seen several patients in referral to the University of Arizona who had received inadequate initial chemotherapy for advanced testicular cancer. Usually, these treatments consisted of combinations of low doses of vinblastine (Velban) plus bleomycin or actinomycin D. This is particularly unfortunate since once a testicular cancer is resistant to one of these agents, the chance of cure (which is now very high for patients without prior chemotherapy) is diminished. Dr. Einhorn and his associates at Indiana University have developed the three-drug chemotherapy program of Velban-bleomycin-*cis*-platinum, which must now be regarded as the standard initial treatment for advanced testicular cancer. *Cis*-platinum is presently investigational but is expected to be approved by the FDA for general use by all licensed physicians in November or December. *Cis*-platinum is currently available as an investigational agent for patients on approved research protocols at the University of Arizona. For further details regarding this new agent, I refer you to the column on *cis*-platinum that appeared in the July 1978 issue of *Arizona Medicine* (pp. 462-463) by Dr. John Rainey. **SES**

There have been dramatic improvements in recent years in the therapy of disseminated testicular cancer. Germ cell neoplasms, even when far advanced, are potentially curable by modern chemotherapy. Although disseminated testicular cancer is a rare disease, it is highly treatable, and primary physicians, internists, and urologists need to have some knowledge of its management.

HISTORY

In the 1960's, standard chemotherapy for testicular cancer was actinomycin D used either alone or in combination. About 15% of patients treated in such a fashion would experience complete disappearance of disease. About half of these patients would relapse, but the others would be cured.[1] Thus, with this therapy, the complete remission rate was relatively low but the durability of remission was reasonably good.

In the late 1960's and early 1970's several new drugs effective in testicular cancer were introduced, namely vinblastine (Velban), bleomycin, and mithramycin. These drugs, when used alone, have essentially the same degree of activity as actinomycin D. Of particular interest are Velban and bleomycin. The major toxicity of Velban is myelosuppression and that of bleomycin is pulmonary fibrosis: hence, these drugs can be given in full dosage when used together. In addition, by virtue of their mechanisms of action, they appear to be synergistic. Studies at the M.D. Anderson Hospital have shown that this regimen will produce approximately 45% complete responses.[2] Once again, about half of these patients will experience long-term remissions and presumably are cured.

The newest active drug in testicular cancer is *cis*-platinum (DDP). It is probably the single most active agent. It is fairly toxic with the most prominent problems being vomiting and nephrotoxicity, but it is practically devoid of myelosuppressive activity and, thus, will combine well with Velban and bleomycin.

Our experience with this three-drug combination at Indiana University has been extremely encouraging.[3] From August 1974 to September 1976, 50 patients with disseminated testicular cancer were treated with DDP + Velban + bleomycin. Table 1 outlines the treatment regimen. Thirty-three (70%) of 47 evaluable patients had drug-induced complete disappearance of all disease and another five had resection of residual tumor after near-total regression from chemotherapy. Recent analysis

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From: The Department of Medicine, Indiana University Medical Center, and Indianapolis Veteran's Administration Hospital, Indianapolis, Indiana. Supported in part by Public Health Service award #M01 RR00-750-06 and American Cancer Society award #CF 3678.

Table 1

Chemotherapy of Disseminated Testicular Cancer*

Remission Induction Regimen

DDP,† 20 mg/M^2, IV, daily for 5 days

Velban, 0.2 mg/kg, IV push, on days 1 and 2 of each course

Bleomycin, 30 units, IV push, 6 hours after Velban on day 2 of each course and weekly for 12 weeks

Courses repeated every 3 weeks for 3-4 courses with continuous IV hydration

Maintenance Regimen

Velban, 0.3 mg/kg, IV, every 4 weeks for a total of 2 years of therapy

*Einhorn and Donohue (3).

†DDP = *cis*-platinum; *cis*-dichlorodiammineplatinum (II).

of these data reveals that 33 of these patients are alive and 27 (57% of the original 47 treated) are disease-free from 21+ to 45+ months. As most relapses of testicular cancer will occur within the first year, and practically all within two years, most if not all of these patients can be considered cured. These are the best results yet reported and consequently we believe that the optimum therapy for patients with metastatic testicular cancer is platinum-based combination chemotherapy.

SPECIFIC ASPECTS OF MANAGEMENT

Tumor Markers

There is no other malignancy in which tumor markers are as important as in testicular cancer. Most useful are assays of B-subunit human chorionic gonadotropin (B-HCG) and alpha-fetoprotein (AFP). When measured by sensitive radioimmunoassay, 90% of patients with active tumor will have elevations of one or both of these markers. There are essentially no false positives and a patient with a history of testicular cancer who has an elevated marker has active tumor even though all other studies are normal. Therefore, they should be treated as such.[4] Moreover, in a patient with metastatic disease, the level of marker correlates quite well with the response to therapy and the markers must normalize before the patient can be considered free of disease. It cannot be emphasized too strongly, however, that these tests must be performed on serum by radioimmunoassay as other techniques are much too insensitive.

Chemotherapy Side Effects

Regimens such as ours tend to be potentially quite toxic, although they are acceptably tolerated with careful management. Alopecia, nausea, vomiting, paresthesias, and constipation are troublesome but reversible. Of major concern is myelosuppression, which is universal, particularly in patients who have had prior radiation therapy. Consequently, if these patients develop granulocytopenic fever they must be hospitalized promptly, cultured, and given empiric treatment with broad-spectrum antibiotics (usually a cephalosporin plus carbenicillin).

DDP is potentially nephrotoxic and a variety of maneuvers have been used to ameliorate renal damage. In our experience, vigorous hydration with normal saline is quite sufficient, but concomitant use of nephrotoxins and, particularly, aminoglycosides must be scrupulously avoided.

The physician must be willing to treat these patients aggressively and must be equipped to deal with toxicity because the ultimate curability of these patients depends on such an approach.

Follow-up of Patients

A major determinant of the prognosis in a particular patient is the extent of disease present at time of initiation of chemotherapy. Patients with minimal disease have a very high probability (19/22 in our series) of entering complete remission. Hence, careful follow-up of all patients with testicular cancer is crucial. We obtain chest x-rays, B-HCG's, and AFP's on our patients monthly for the first year and every other month for the second year after surgery for localized disease or chemotherapy for disseminated disease. Thus, recurrent disease can be diagnosed quite early, usually by elevated markers only, at a time when chemotherapy is likely to be extremely effective.

Integrated Management of Local Disease

Most patients with testicular cancer present initially with disease localized to the testis or the testis and retroperitoneal nodes. The diagnosis is usually confirmed with inguinal orchiectomy. Ordinarily, patients with pure seminoma are then treated with radiotherapy with extremely high probability of cure. However, the approach to patients with non-seminomatous neoplasms (embryonal carcinoma, teratoma, choriocarcinoma, or mixtures) is considerably different. If there is disease present outside the testis and draining lymphatics, the first approach should be platinum-based combination chemotherapy.

However, if thorough evaluation including whole-lung tomograms and negative markers reveals no supra-diaphragmatic disease, we favor proceding with radical bilateral retroperitoneal lymph node dissection. If the nodes are negative, therapy is completed and the patient has a very high probability of cure. As mentioned previously, however, careful follow-up with chest x-rays, B-HCG's, and AFP's is required.

Considerably more controversal, however, is the best course of action if the nodes are positive. Many clinicians use pre-operative and/or post-operative radiation therapy in this situation.[5,6] However, urologists who employ surgery alone seem to have equivalent results.[7,8] Whatever form of therapy is used, about one half of such patients will relapse and require systemic therapy. In our experience, patients who have had prior irradiation tolerate chemotherapy poorly and have a lower complete remission rate. Consequently, we omit radiotherapy in such patients.

We are frequently asked our opinion as to the role of adjuvant chemotherapy in patients with resected positive retroperitoneal nodes. A number of these patients are cured by surgery alone. Of the patients who relapse, a sizeable number will be cured by chemotherapy, particularly if the relapse is diagnosed early. Consequently, the utility of adjuvant therapy is very much open to question and the answer can be determined only by a well-designed controlled clinical trial. Such a study is now in progress.

CONCLUSIONS

Disseminated testicular cancer is a highly treatable disease, and approximately one half of all patients with disseminated disease can be cured with modern chemotherapy. The treatment is vigorous and requires the services of experienced physicians. Patients in all phases of the disease require regular follow-up consisting of chest x-rays and tumor markers assays. Chemotherapy may be useful in the adjuvant setting, but a controlled clinical trial is required to clarify this issue.

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Initial Studies in the Development Of an Immunoassay to Detect Pancreatic Carcinoma

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ABSTRACT

In attempting to develop an immunoassay to aid in the early diagnosis of cancer of the pancreas, a pancreatic tumor associated antigen (TAA) was identified and partially purified. The antigen is apparently released from the cell membrane in a macromolecular complex, as it dissociates into several subunits in the presence of sodium dodecyl sulfate. Identification and isolation of the subunit(s) containing the pancreatic tumor antigen will hopefully provide a substance which may be used in a diagnostic immunoassay to detect pancreatic cancer at an early stage of development.

Cancer cells often express surface antigens, referred to as tumor associated antigens (TAA),[1,2] which are not detectable on normal, non-cancerous cells. As the immune mechanisms of the cancer patient frequently recognize and initiate an immune response, though often unsuccessful, against these tumor antigens, detection of the antigens could be of great benefit in the diagnosis and treatment of cancers.[3,4] For example, radioimmunoassays are already in use to detect the presence of carcinoembryonic antigens (CEA) which are associated with some types of tumors.[5] As other specific purified tumor associated antigens become available it might be possible to screen suspected cancer patients for a given tumor type by using panel skin testing or an appropriate radioimmunoassay.

In line with this, we have initiated a study to identify

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and purify a TAA from human pancreatic tumors which might be used in an immunoassay to detect pancreatic cancer at an early stage of development. The urgent need for such a diagnostic aid can be better appreciated when it is realized that cancer of the pancreas has climbed from relative obscurity to third place in increased incidence among all cancers in recent years. More important, it is now the fourth leading cause of death from cancer in the United States and the adjusted survival rate for the approximately 25,000 individuals with cancer of the pancreas in the U.S. alone in 1978 will be less than 2% for 5 years.[6]

Detection and treatment of this cancer in its early stages of development could dramatically improve the survival rate for patients with pancreatic carcinoma. However, the dilemma of obtaining an early diagnosis is well recognized,[2,5] although many approaches have been used in attempting to make an early diagnosis of cancer of the pancreas.

As a first step toward our goal of developing a diagnostic procedure for detecting cancer of the pancreas we have substantiated the existence of a tumor associated antigen on human adenocarcinoma of the pancreas.[7] For this, normal human pancreas and adenocarcinoma of the pancreas were obtained from either autopsy or surgical specimens and homogenized in saline. The TAA was then solubilized in hypertonic sodium chloride and the existence of the antigen in the extracted material was demonstrated using rabbit anti-pancreas cancer serum which had been absorbed with pooled human lymphocytes and normal pancreas tissue. Partial purification of the antigen was achieved using gel filtration and the antigen was found to have a relatively high molecular weight, i.e., greater than 300,000. The TAA was not detectable on normal pnacreatic tissue, and does not cross react with CEA.

Further purification of the pancreatic TAA was achieved using ion exchange chromatography. Using this procedure, it was found that the high molecular weight portion of the tumor extract contained a fraction which eluted from the ion exchange column with 0.6 M sodium chloride. Again, this fraction, which contains the pancreatic TAA, was not present on normal pancreas tissue. When the TAA eluted from the ion exchange column was subjected to sodium dodecyl sulfate (SDS)-polyacrylamide gel electrophoresis, four different components were observed. As SDS causes dissociation of macromolecular complexes, this suggests that the TAA is released from the cell membrane as a macromolecular complex, but, in the presence of reducing agents such as SDS, can be dissociated into smaller components.

It appears, therefore, that the pancreatic tumor antigen we are studying differs from the glycoprotein antigen obtained from the ascites fluid of a pancreatic carcinoma recently described by Chu *et al*.[8] The glycoprotein antigen described by these investigators has a molecular weight of 185,000 and did not dissociate into smaller subunits in the presence of SDS. Also, the antigen described by Chu *et al* appears to cross react with anti-CEA.

At this time it is not known whether the entire macromolecular complex of the TAA described here is needed for antigenicity or if a smaller unit is actually the TAA. Work is continuing to isolate the individual components observed on dissociation of the high molecular weight complex and to identify the pancreatic TAA.

In summary, the first step in achieving an immunoassay to assist in the early diagnosis of cancer of the pancreas, i.e., the isolation of a pancreatic TAA, is nearing completion. The next phase of this work will be to determine if the isolated pancreatic cancer TAA will provide a positive correlation for individuals with pancreatic cancers. If this correlation proves significant, and there are indications that it will,[4] an invaluable diagnostic procedure would become available to physicians to aid in detecting cancer of the pancreas. More importantly, however, lives of patients with cancer of the pancreas could be saved which are now being lost.

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Pediatrics

Congenital Anomalies of Coronary Arteries

In Infants and Children

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Congenital anomalies of the coronary arteries in infants and children are unusual and fascinating problems.[4,5,9,11,12,18]

Five patients are reported. Two patients had coronary arteriovenous fistula. Three patients had anomalous origin of the coronary artery from the pulmonary artery.

Between September 1961 and November 3, 1976, 513 open heart procedures and 497 closed heart procedures were performed for congenital heart disease at Good Samaritan Hospital. Of the 1,010 operative cases, 5 had congenital anomalies confined to the coronary arteries (0.5%).

CASE STUDIES

A. Coronary Artery Arteriovenous Fistula

Case 1 TM: A 19-month-old child was discovered to have a cardiac murmur in the course of routine examination. The child was totally asymptomatic and the history was otherwise unremarkable.

Examination disclosed a thrill palpable along the lower left sternal border and a continuous murmur Grade IV/VI in the same region. There was no evidence of cardiac enlargement. The remainder of the examination was unremarkable.

The chest x-ray and the electrocardiogram were normal. Cardiac catheterization disclosed a coronary arteriovenous fistula originating from the left anterior descending coronary artery and entering the apex of the right ventricle anteriorly (Fig. 1).

The operative findings were striking. A massively dilated anterior descending artery was seen to course along the interventricular groove and to terminate at the apex of the right ventricle where there was a slight bulge of the wall of the ventricle. Ligation of the fistula was readily accomplished. The site of the fistula permitted ligation without compromising the distal integrity of the anterior descending coronary (Fig. 2). No electrocardiographic changes were noted upon temporary occlusion of the fistula. The procedure was performed without the need for cardiopulmonary bypass; however, facility for instant cardiopulmonary bypass was available. The operative procedure was well tolerated.

The postoperative course was entirely uneventful. A repeat supravalvular aortogram demonstrated complete closure of the fistula (Fig. 3).

Case 2 JC: A 7-month-old Indian male. The clinical picture and findings were remarkably similar to Case 1.

The child was asymptomatic and the murmur was the reason for diagnostic evaluation.

The chest x-ray and electrocardiogram were normal. Cardiac catheterization demonstrated a left coronary artery to right ventricular fistula (Fig. 4).

Surgical closure of the fistula again was simple and done without cardiopulmonary bypass. The postoperative course was uneventful.

B. Anomalous Origin of the Left Coronary Artery From the Pulmonary Artery

Case 3 TW: A 4-month-old white male was the product of a full term normal delivery. The infant did well the first month of life. Subsequent to this, there was failure to thrive which caused further investigation. He was noted to be fussy and irritable with feedings, and there were coughing spells with feeding sometimes associated with episodes wherein he became pale and sweaty.

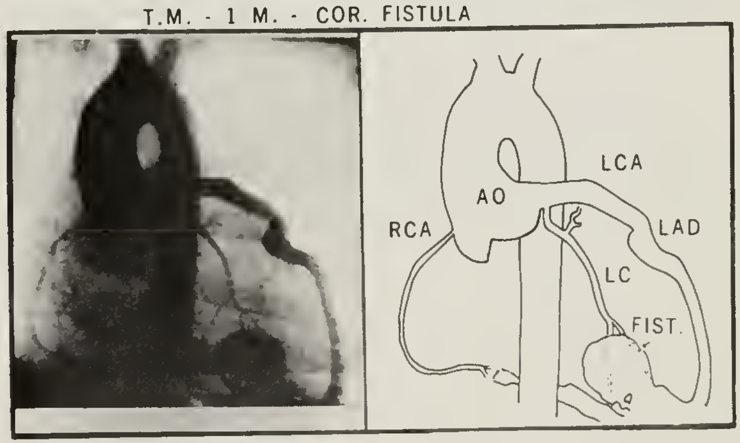

Figure 1 (Case 1, TM)

The huge left coronary artery (LCA) and the fistula from the terminal anterior descending coronary (LAD) to the right ventricle are demonstrated. The relatively small right coronary artery (RCA) is also shown.

Examination revealed marked cardiomegaly, left ventricular preponderance, paradoxical motion of the left ventricular impulse, an S_3 diastolic gallop rhythm, and no murmurs. Congestive heart failure was noted with enlargement of the liver.

The chest x-ray revealed massive cardiomegaly with associated pulmonary edema. The electrocardiogram and vectorcardiogram showed the characteristic findings of anterolateral myocardial infarction (Fig. 5). Echocardiogram indicated the presence of cardiomegaly and increased left ventricular end-diastolic volume (Fig. 5).

Cardiac catheterization revealed anomalous origin of the left coronary artery from the pulmonary artery. The

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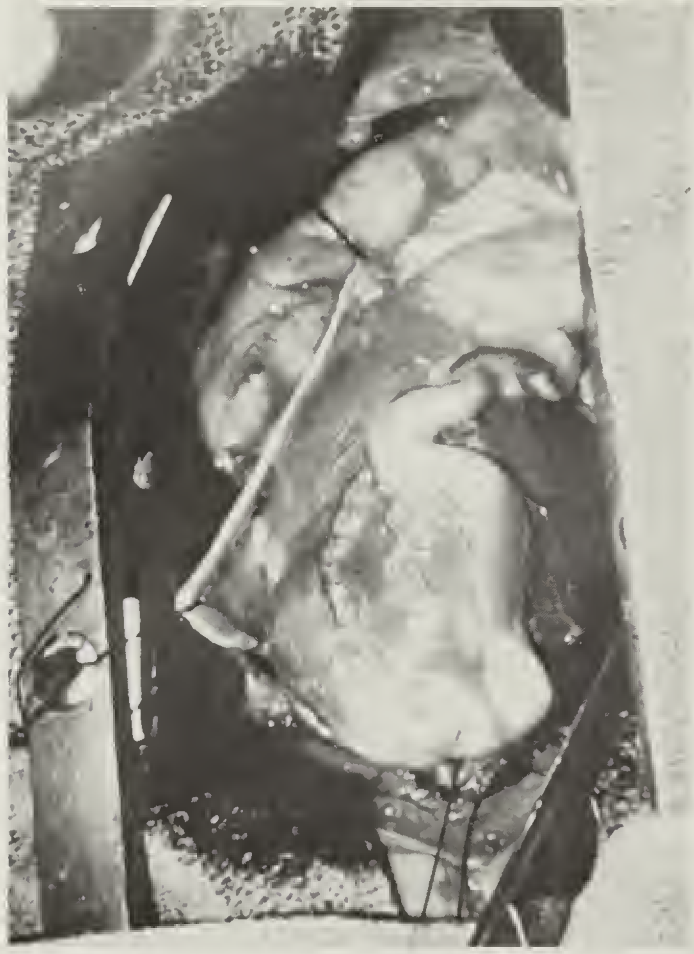

Figure 2 (Case 1, TM)

The huge anterior descending coronary (LAD) is seen. The fistula occurs at the point where the right ventricular apex bulges and has an opaque fibrous appearance. The ligation of the fistula was readily performed utilizing mattress sutures beneath the coronary artery and buttressed with teflon felt pledgets.

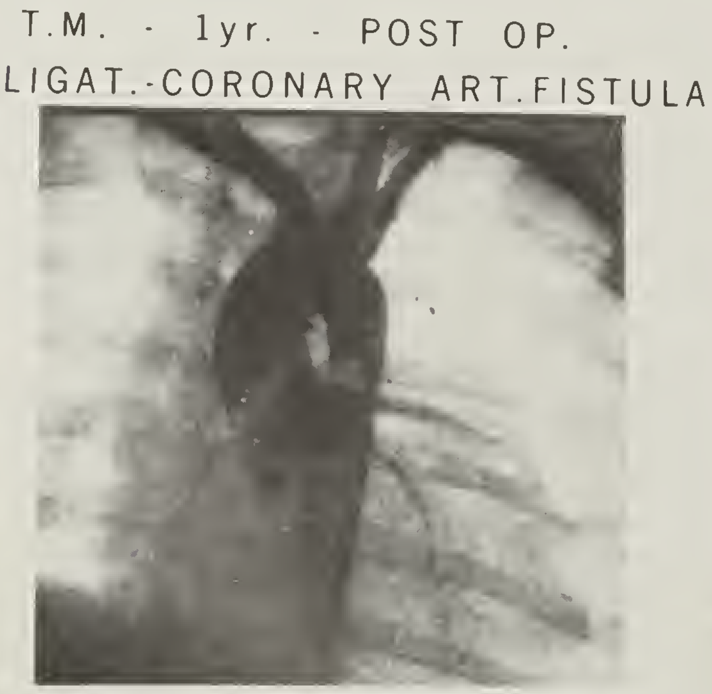

Figure 3 (Case 1, TM)

The postoperative aortogram shows no evidence of the previous left coronary to right ventricular fistula (See fig 1).

right coronary artery arose normally from the sinus of Valsalva. Retrograde flow into the left coronary was noted. Oxygen step up in the pulmonary artery was recorded. A huge left ventricle with a markedly increased end-diastolic volume was demonstrated. Marked dyskinetic action of the anterolateral wall of the left ventricle and the posterior wall was seen (Fig. 5). The child's condition continued to deteriorate with persistent congestive heart failure, failure to thrive, and increasingly frequent episodes consisting of discomfort, respiratory distress, and associated pallor and sweating.

On 4-18-75, suture ligation of the left coronary at its origin from the pulmonary artery was carried out. The child tolerated this procedure remarkably well. It was performed without the need for cardiopulmonary bypass,

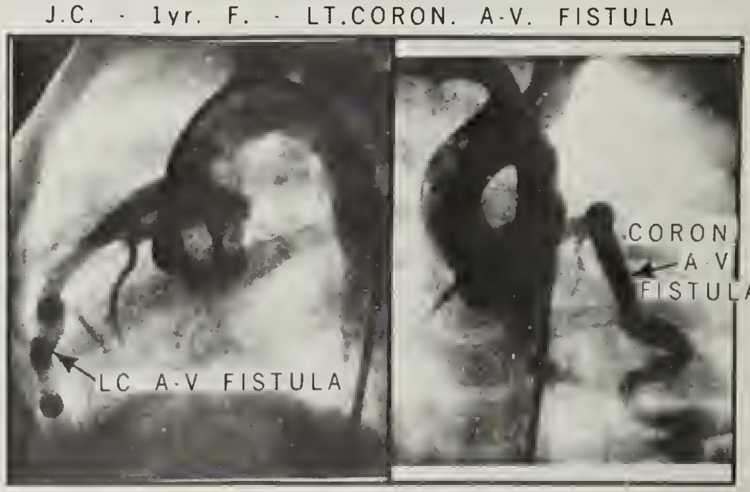

Figure 4 (Case 2, J.C.)

The enormous left coronary artery (LCA) is seen. The fistula is only faintly seen in the lateral view from the terminal LCA to the right ventricle.

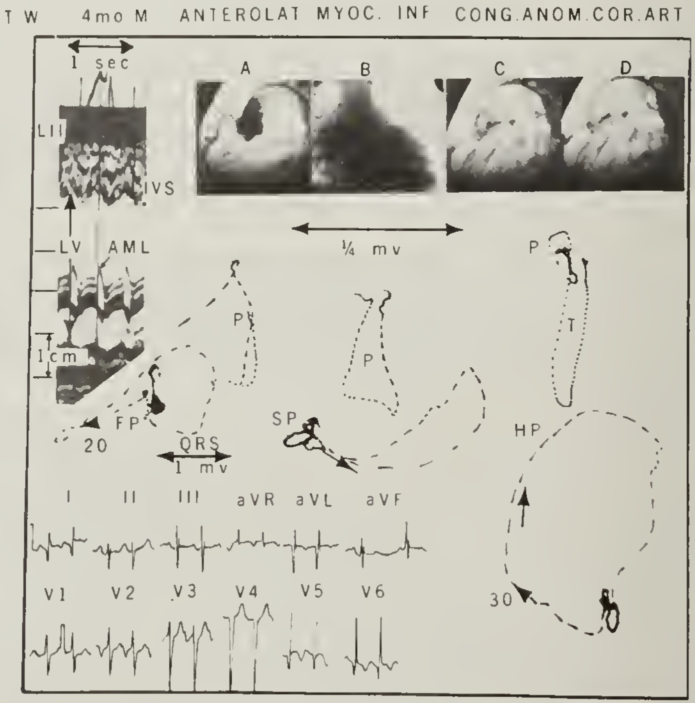

Figure 5 (Case 3, T.W.)

The angiogram cuts show opacification of the right coronary artery (RCA) in A., and retrograde filling on the left coronary artery (LCA) which in turn empties into the pulmonary artery (PA), C-D. Cardiomegaly is shown in B. The echocardiogram demonstrates a large and poorly contractile left ventricle. The electrocardiogram and vectorcardiogram show anterolateral infarction.

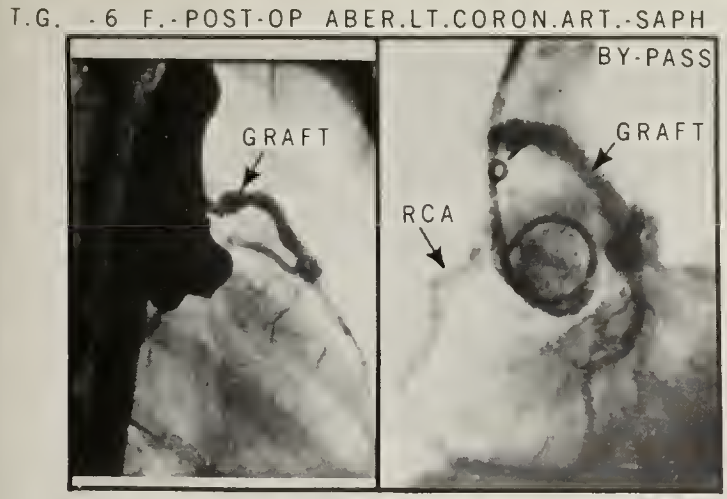

Figure 6 (Case 4. T.G.)
Opacification of the saphenous vein bypass graft from the aorta to left anterior descending (LAD) is seen.

although the facility for prompt institution of cardiopulmonary bypass was at hand.

The child was readmitted one month later with a convulsion as a result of an acute cerebrovascular episode. He died in coma on 5-12-75.

Case 4 TG: A 24-month-old child weighing 22 pounds evaluated for a cardiac murmur. She was a premature infant who weighed 2 lbs 3 oz. She was well and active, although there was a history of fatigue.

On examination, the pulses were bounding, the heart was slightly enlarged, and a Grade III/VI holosystolic murmur was heard over the precordium, but best heard at the mid left sternal border. A Grade I/VI early diastolic murmur was also heard in expiration at the lower left sternal border. Congestive heart failure was absent.

Chest x-ray showed slight left ventricular dominance and a minimal increase in pulmonary vascular markings. The electrocardiogram revealed left axis deviation, minimal left ventricular hypertrophy, and no evidence of ischemia.

Right heart catheterization demonstrated a mild step up in oxygen saturation at the pulmonary artery level with a pulmonary/systemic flow ratio of 1.3/1. Aortogram revealed an enlarged right coronary artery (RCA) arising from the right sinus of Valsalva and a left coronary artery (LCA) filling retrograde from the RCA, demonstrating its origin from the main pulmonary artery (MPA) with a "coronary steal" into the MPA.

On 1-15-74, utilizing cardiopulmonary bypass, the origin of the anomalous left coronary artery was closed from within the MPA, there being an early division of the left main coronary into anterior descending and circumflex arteries. Both RCA and LCA were large. A saphenous graft was utilized as a single bypass from aorta to proximal anterior descending. The flow rate in the graft was 70 cc per minute. She tolerated the procedure well. Her postoperative course was smooth. Repeat cardiac catheterization, which included an aortogram, was done 11-24-75. Patency of the aortocoronary graft and a normally contractile left ventricle were demonstrated (Fig. 6). An echocardiogram, done on 11-25-75, demonstrated a left ventricular ejection fraction of 0.56.

Case 5 GS: A 10-year-old Apache Indian child underwent cardiac evaluation because of cardiac enlargement and mitral insufficiency. The findings were first noted in 1967 when she was 4 years of age. Her history in infancy and early childhood was normal except for symptoms of fatigability and rather non-descript precordial discomfort.

On examination, she was a well-developed child in good general condition. Moderate to marked cardiac enlargement was readily noted. There was evidence of left ventricular preponderance. A harsh Grade V/VI pansystolic murmur of mitral insufficiency was heard at the apex radiating to the left axilla. There was no evidence of congestive heart failure.

Electrocardiogram revealed left ventricular hypertrophy with ischemia. Chest x-ray revealed moderate cardiomegaly.

In 1972, cardiac catheterization was performed which revealed a moderately enlarged heart with primary

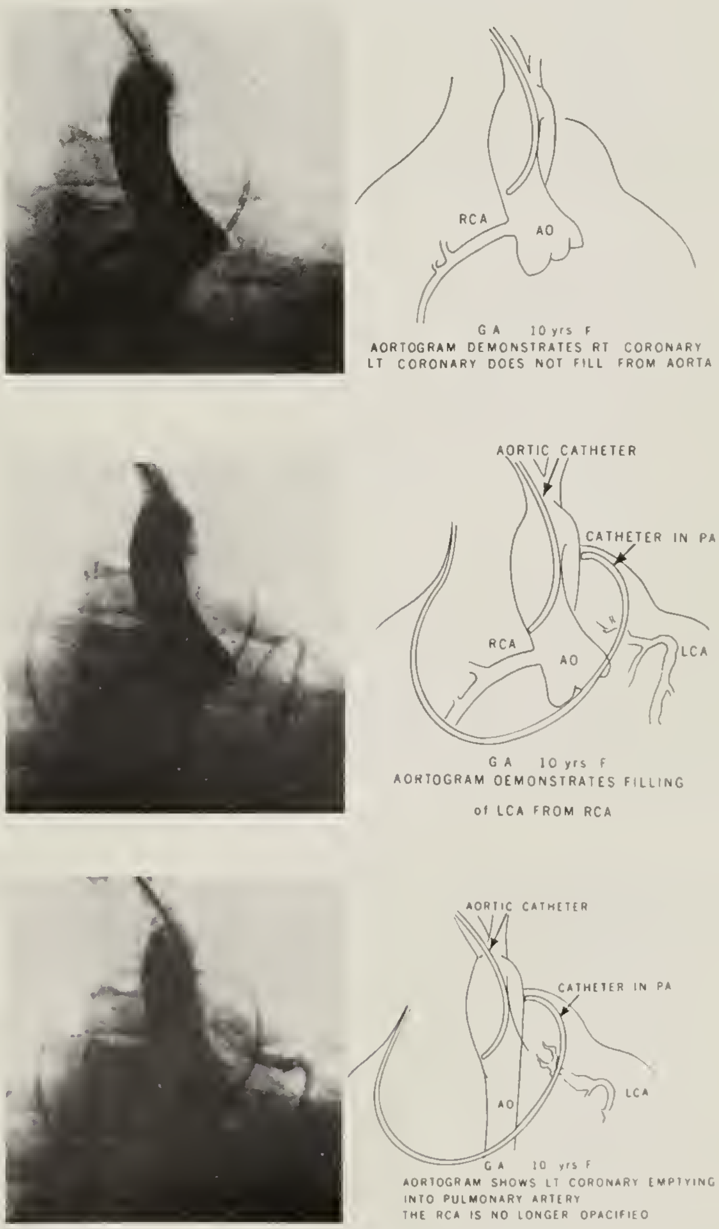
RCA
AO
G A 10 yrs F
AORTOGRAM DEMONSTRATES RT CORONARY
LT CORONARY DOES NOT FILL FROM AORTA
AORTIC CATHETER
CATHETER IN PA
RCA
AO
LCA
G A 10 yrs F
AORTOGRAM OEMONSTRATES FILLING
of LCA FROM RCA
AORTIC CATHETER
CATHETER IN PA
AO
LCA
G A 10 yrs F
AORTOGRAM SHOWS LT CORONARY EMPTYING
INTO PULMONARY ARTERY
THE RCA IS NO LONGER OPACIFIEO

FIgure 7 (Case 5, G.A.)
A. The aortogram reveals opacification of the right coronary artery (RCA) which arises normally from the sinus of Valsalva. B. Retrograde filling of the LCA is demonstrated. C. A later view shows the LCA terminating in the MPA. The RCA is no longer opacified.

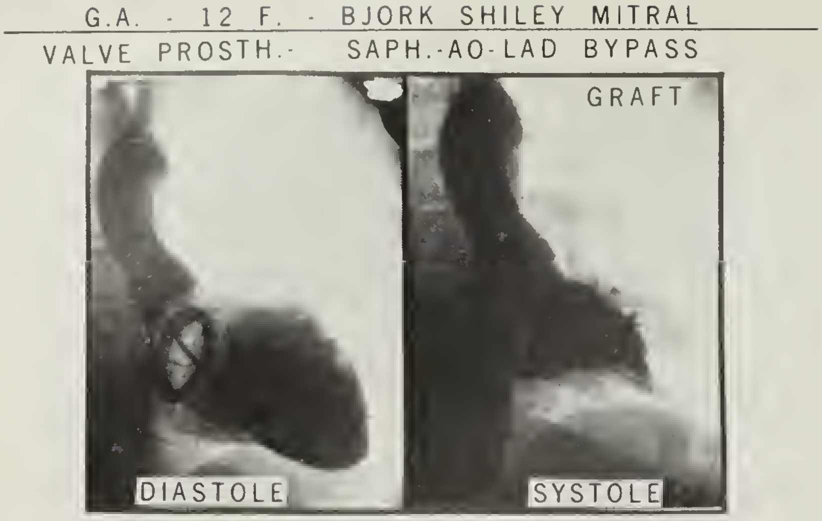
G.A. - 12 F. - BJORK SHILEY MITRAL
VALVE PROSTH.- SAPH.-AO-LAD BYPASS
GRAFT
DIASTOLE
SYSTOLE

Figure 8 (Case 5, G.A.)
The ventriculogram reveals good contractility of the left ventricle. A large Beall mitral prosthesis is evident.

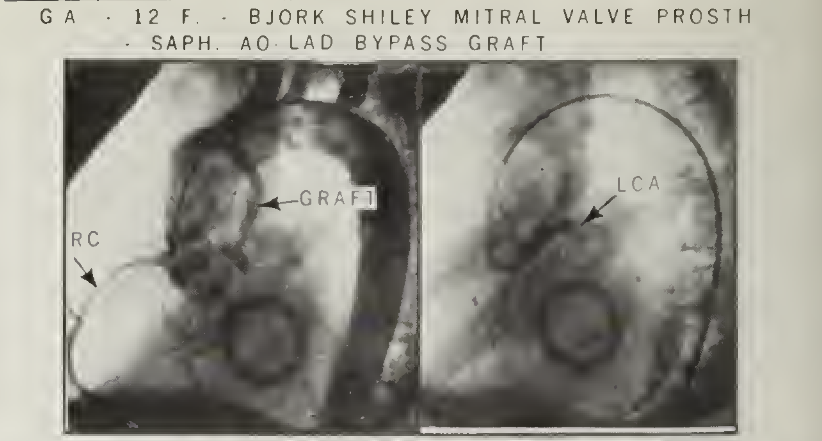
G A - 12 F. - BJORK SHILEY MITRAL VALVE PROSTH
- SAPH. AO-LAD BYPASS GRAFT
GRAFT
RC
LCA

Figure 9 (Case 5, G.A.)
A patent saphenous graft from the aorta to left anterior descending coronary artery, closure of a previously existing left coronary to pulmonary artery fistula and the mitral prosthesis are demonstrated.

enlargement of the left ventricle. Left ventriculogram revealed massive mitral insufficiency, increased end-diastolic volume of the left ventricle, and dyskinetic action of the anterolateral wall of the left ventricle. Aortogram demonstrated anomalous origin of the left coronary artery from the pulmonary artery. Both the right and left coronary vessels were enlarged. There was evidence of a left-to-right shunt at the pulmonary artery level (Fig. 7).

On 10-13-72, replacement of the mitral valve with a large Beall prosthesis was performed. Closure of the origin of the left coronary from the pulmonary artery was performed from within the pulmonary artery. A saphenous graft was utilized as a single graft from aorta to the anterior descending coronary. The operative procedure was well tolerated.

Her postoperative course was quite satisfactory. Repeat cardiac catheterization was performed on 11-24-75. At this time, there was marked reduction in the size of the heart, the left ventricle principally (Fig. 8), a normally functioning mitral valve prosthesis, normal hemodynamic studies, and a patent graft from aorta to anterior descending coronary (Fig. 9).

DISCUSSION

Congenital Arteriovenous Fistula

Coronary arteriovenous fistula is generally seen in asymptomatic children who have a cardiac murmur.[4,5] The murmur can be confused with that found in patent ductus arteriosis or aortopulmonary window. Examination does not often disclose other abnormalities. The heart is usually normal in size and the electrocardiogram is likewise normal.

The variable anatomy of the coronary arteries and the fistula is usually clearly demonstrated by coronary arteriography.[4,5] The left-to-right shunt is rarely sufficient to cause significant hemodynamic changes in children.

Later in life, the left-to-right shunt may increase and can cause hemodynamic problems.[2,4,5,7,15] Rarely, aneurysm formation and myocardial ischemia due to a "steal" effect have occurred.[5] Myocotic aneurysm and bacterial endocarditis have been reported.[4]

The operative correction of coronary arteriovenous fistula is often a relatively simple procedure. Closure of the fistula and preservation of the coronary which gives rise to the fistula are the objectives of the procedure.[4,7,9,15] Occasionally, the fistula may be quite complex and multiple entries of the fistula into a cardiac chamber can occur.[9,15] In that instance, the operative correction may be more complex and demanding. The technics of endoaneurysmorrhaphy and aortocoronary bypass may be required.[9]

Anomalous Origin of the Coronary Arteries From the Pulmonary Artery

Anomalous origin of the coronary arteries from the pulmonary artery is quite a different matter. It presents in one of four ways:

1. In infancy as massive congestive heart failure (CHF) associated with angina-like symptoms as illustrated in Case 1.
2. Continuous to and fro murmurs in an older child as in Case 2.
3. Mitral insufficiency of non-rheumatic origin in a child or young adult as in Case 3.
4. Or finally, in adults as an incidental finding, or as myocardial ischemia, or sudden death.[8]

A review of 140 cases by Wesselhoeft et al[18] revealed that approximately 80 percent of patients are seen in infancy with congestive heart failure, with or without angina-like symptoms, and an electrocardiogram demonstrating myocardial ischemia. The remainder are seen in childhood or later.

In infancy, the electrocardiogram or vectorcardiogram is often diagnostic.[13;18] The differential diagnosis usually concerns primary myocardopathy. The electrocardiogram shows left ventricular hypertrophy and usually evidence of anteroseptal or anterolateral myocardial infarction. The vectorcardiogram is almost always diagnostic of anteroseptal or anterolateral infarction.

The operative management of the condition in infancy is fraught with difficulty and hazard, and the operative mortality is high.[11,13] Until recently, ligation of the anomalous coronary was all that could reasonably be offered.[15:18] The experience with ligation is variable, but generally poor.[13,15-18] Utilizing a technic of removing an oval button from the pulmonary artery, to which the anomalous coronary artery is attached, thus enlarging the ostium of the anomalous coronary, anastomosis can be made directly to the aorta,[6] or the subclavian artery.[10:14:16] Senning[17] has reported the successful resection of a left ventricular aneurysm in an infant.

Nora, McNamara et al[11] have recommended the non-operative treatment of infants with this condition and have reported a successful outcome in the majority of instances. The child is thus carried through the highly critical and difficult first several months of life until a more satisfactory operative procedure can be done in early childhood. Their experience, however, is different from the majority of those who have written about this condition.

As earlier noted, less than 20 percent of infants survive the first year of life.[18] The majority of patients treated successfully by operation have been between 3 and 10 years of age.[1,3,7,9,11] The risk of surgery in children is low. The options which are available to the surgeon are more numerous and satisfactory. Thus, aortocoronary bypass utilizing either the internal mammary artery or the saphenous vein can be employed. Reimplantation of the anomalous left coronary directly into the aorta[6] or utilizing the subclavian artery[10,14,16] are attractive options. Mitral insufficiency, of varying degree, has been commonly noted in association with anomalous origin of the left coronary from the pulmonary artery in childhood. The character and degree of mitral insufficiency, together with the operative findings, dictate the need for mitral valve replacement. Early operative correction of anomalous origin of the left coronary artery from the pulmonary artery may well prevent damage of the ventricular myocardium and progression of the mitral insufficiency may be prevented. Mitral valve replacement may, therefore, be avoided.

SUMMARY AND CONCLUSIONS

Five patients who have undergone operative correction of anomalies of the coronary arteries in infancy and childhood are reported.

The operative management of children with coronary arteriovenous fistula is quite satisfactory. The results are good and the risks of surgery are low.

The surgical treatment of anomalous origin of the left coronary artery from the pulmonary artery in childhood is highly satisfactory and the results are excellent.

A high index of suspicion with respect to the existence of anomalous origin of the coronary artery from the pulmonary artery should apply to a child or young adult with mitral insufficiency when there are no clinical history or findings which suggest rheumatic fever. Early surgical correction of anomalous origin of the left coronary artery from the pulmonary artery may obviate the need for mitral valve replacement, as a result of improvement of myocardial ischemia, avoidance of extensive myocardial scarring, and improved myocardial performance.

The principal problem in the treatment of anomalous origin of the coronary artery from the pulmonary artery largely concerns infants in the first six months of life. Until very recently, the results of operation were quite poor. Utilizing newer surgical technics, which effect the establishment of a two coronary system, the results have improved. Consequently, early diagnosis and operative intervention may permit better results.

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Psychiatric Disorders

The Paranoid Personality

William B. McGrath, M.D.

Personality is an ensemble of defensive and offensive traits mostly brought forward from childhood. The paranoid personality was subjected to unfair criticism. To defend himself he developed consummate skill in the use of four mental mechanisms: denial, rationalization, projection, compensation.

1. Denial. The paranoid will never admit to being wrong. Hence he cannot be totally honest with himself or with those around him. Neither can he accept the fact that others might be totally honest with him. Instead of outright lying he will use innuendos, half truths, phrases out of context. A petty tyrant in a large bureaucracy was overheard: "The Director and I had lunch today." Challenged, he forgave us and pointed out that he had not used the word, together. A back-biting nurse remarked: "Doctor X is certainly fond of his female patients." As a matter of fact Doctor X is invariably courteous to everyone, male or female, young or old. A jealous doctor said of a colleague: "I hope he's not hitting the bottle."

2. Rationalization. This mechanism, too, is contaminated with subtle dishonesties. A high school teacher told his students that they would not be admitted to the next class unless they brought dunce caps. When they protested against the insult, his wide-eyed innocence was typical. First he denied any inference that the caps were to be worn. When that evoked skepticism he argued that he hadn't had time to explain his benevolent purpose. Lastly and lamely he insisted that they were not really angry at him but were scapegoating him because they were displeased with the principal.

3. Projection. The paranoid reads into the attitudes of others the disparaging malevolence which he feels toward them. If one assumes too readily that you are going to cheat him, then you may assume that he is going to try to cheat you. The husband of a patient told the nurse that we hospitalized her only to exploit his insurance. Is he not conveying what he would do if the circumstances were reversed? Remember: One may judge another's character by observing his expectations. The person who is looking for hostility will either find it or provoke it or imagine it.

4. Compensation. Having been belittled the paranoid exaggerates his self-importance. Often he seeks positions of authority. If he was tyrannized as a child he will tyrannize those beneath him. And in a vicious circle he will ingratiate himself and hence provoke tyranny from those above him. The paranoid's only escape or defense is to become a kind of impostor, demanding more recognition and power than he can achieve. He pretends to himself and others that he is superior and is the object of envy. His affectations and inflated ego finally bring him the scorn and rejection which he himself has harbored toward those around him, and the circle is closed.

Paranoid personalities (not delusional, not psychotic) are frighteningly common, usually unrecognized, and possibly on the increase. They infest politics and the military. One or more is to be found in any organization. They are egotistic, humorless, inflexible, unwilling to consider any other viewpoint or opinion or terms than their own. They are unhappy themselves and they are the source of much unhappiness and many hurtful misunderstandings wherever they go. They cannot trust or be trusted because the mechanisms they employ (denial, rationalization, projection, compensation) are never wholly honest. One tries and tries and fails and fails and fails again to reason with them or to learn the rules of the unkind game they are playing.

There is seemingly less honesty in the world now than at any time in history. One recognizes untruths and misrepresentations in politics, in industry, in merchandizing, in everything with which we come in contact. This is partly due to the sadly diminished authority of religion and the approaching demise of virtue. Secondly, some dishonesties are invited and rewarded by an overregulated society. Our awareness of dishonesties is heightened by their exposure in the media.

So we need a healthy skepticism. To be quick to detect shades of dishonesty does not make one paranoid. But paranoia can result from the habitual practice of dishonesty. If you are slow to identify the paranoid personality you will get hurt. It is best to stay away from him. Let him be a vindictive victim at someone else's expense. You cannot help him because he is sure that you are the one who needs help; you are the one who lacks insight and understanding.

From: Dr. McGrath, Medical Director, Camelback Hospital, 5055 N. 34th St., Phoenix, AZ 85018.

Case of the Month #34

Frederic C. Park, III, M.D.
John C. Bjelland, M.D.
Glenn C. Cook, M.D.
William H. Stover, Jr., M.D.

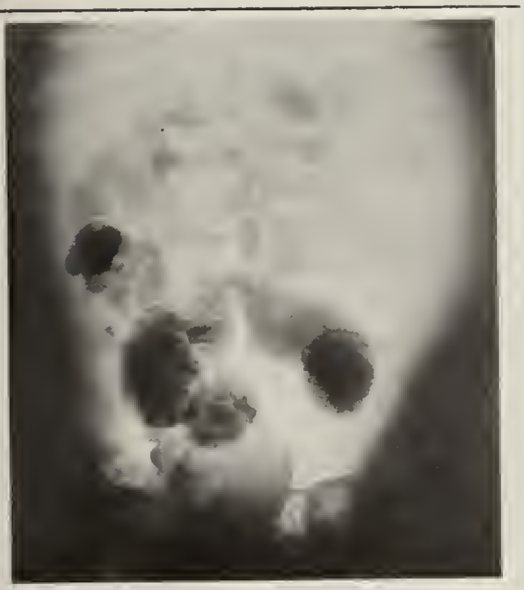

FIGURE I
Supine view of the chest and abdomen.

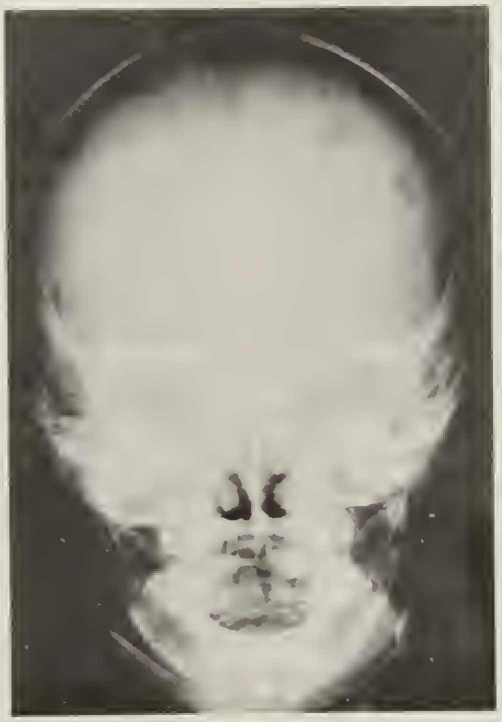

FIGURE II
AP view of the skull.

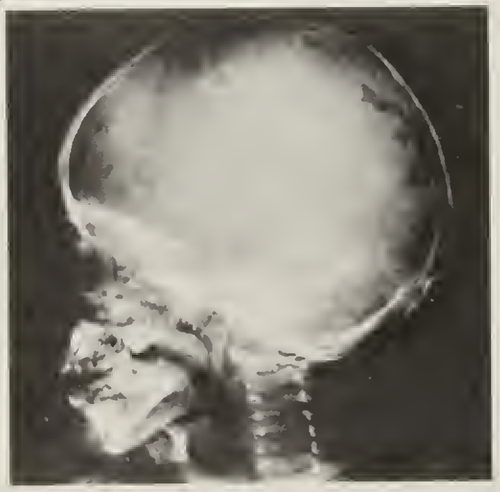

FIGURE III
Lateral view of the skull.

A 3½ year old Mexican female was seen in the Pediatric Clinic with a presenting complaint of increasing abdominal girth. Physical examination at that time revealed bilateral proptosis and marked hepatosplenomegaly with massive ascites. Abdominal petechiae and a seborrheic purpura of the scalp were also noted.

The initial blood count revealed a pancytopenia including thrombocytopenia. Radiographs of the abdomen and skull were then obtained confirming the suspected clinical diagnosis. (Figure I-III). What is the diagnosis?

From: Dept. of Radiology, Univ. of Arizona Health Sciences Center, Tucson, AZ 85724.

Histiocytosis-X Letterer-Siwe Syndrome

This is an example of Letterer-Siwe syndrome, the disseminated form of Histiocytosis-X. Histiocytosis-X is a comprehensive term which collectively refers to the spectrum of non-lipid reticuloendotheliosis: eosinophilic granuloma, Hand-Schuller-Christian syndrome, and Letterer-Siwe syndrome. These various forms of the disease complex are intimately related clinically and pathologically. Microscopically, these lesions are characterized by the presence of diffuse proliferation of histiocytes, with or without granuloma formation in which masses of eosinophils, lymphocytes, plasma cells and/or large histiocytes may accumulate.

The etiology of the non-lipid reticuloendotheliosis is not known. Current speculation includes the possibility of infectious process (especially viral) and genetic predisposition. The course is variable, with spontaneous remissions more frequent then with other neoplastic processes. A small percentage, mostly those with the dissiminated Letterer-Siwe form, die of their disease. About 50% are left with residual medical disabilities, ranging from poor growth to persistent diabetes insipidus.

Eosinophilic granuloma of soft tissues occur predominantly in the central nervous system and the submucosa of the upper gastrointestinal and respiratory tracts. This disease spectrum should always be considered in the differential diagnosis of an otherwise healthy child who develops chronic ear and mastoid problems, especially if there is a history of seborrhea or other rashes associated with purpura. Solitary eosinophilic granuloma of bone has a predilection for the skull and long bones. Radiographically the lesions are lytic and sharply demarcated with bevelled margins. These are the result of histiocytic proliferations within the bone. Such lesions are usually characteristic of the diagnosis.

Unilateral proptosis may be the first sign of the disease clinically. This is a frequent presentation of Hand-Schuller-Christian syndrome, which is the intermediate form of the disease spectrum.

The disseminated form, Letterer-Siwe syndrome, may present with symptoms related to the specific organ involved. Other presentations that are strongly suggestive of an infiltrative disease are prominent cervical lymphadenopathy, a rash resistant to conventional therapy, purpura (as in this case), pneumonic infiltrates that do not clear, and persistent hepatomegaly or splenomegaly. In an infant, gingival mucosal lesions that resemble candida infection, but resist therapy are also very suspicious for Histiocytosis-X.

Although diabetes insipidus is a well known complication of Histiocytosis-X, the frequency of this complication has declined since the advent of chemotherapy.

This case radiographically demonstrates the generalized skeletal and visceral involvement of Letterer-Siwe syndrome. Figure I demonstrates the massive ascites which occurs in the fulminant form of the disease with marked hepatic involvement. This is evidenced by the greatly distended, fluid filled abdomen. Diffuse, destructive histiocytic involvement is also present in the pelvic bones. Figures II and III show multiple lytic lesions within the calvarium. In this case, due to the advanced aggressive stage of the histiocytic proliferation within the diploic space, the calvarial margins of the bony lesions are poorly delineated.

This child was treated with Prednisone and Vincristine but succumbed to this aggressive form of the disease which is usually slow to respond to therapy.

U of A
Grand Rounds

Anticoagulation Therapy in Cardiovascular Disorders

W. David Hager, M.D.

Systemic emboli may complicate the clinical course of a number of cardiovascular disorders and leave a devastating residual deficit. Since anticoagulation therapy has been shown to lower the incidence of peripheral emboli, it is important to select those patients who are likely to develop emboli so that the inherent risk of hemorrhage with anticoagulants may be balanced against the benefit of this therapy.

This dicussion describes the use of anticoagulation therapy in preventing systemic emboli in the clinical management of three situations in which its benefit has been well established and in four other clinical settings in which anticoagulation therapy has been strongly suggested but for which data do not exist to recommend it unequivocally. Patients sustaining an acute myocardial infarction, undergoing elective cardioversion, or being followed for rheumatic mitral valve disease with atrial fibrillation should be anticoagulated. In addition, patients with atrial fibrillation secondary to coronary artery disease and those with sick sinus syndrome, asymetric septal hypertrophy, and congestive cardiomyopathy may require chronic oral anticoagulation.

Anticoagulation therapy may be accomplished with heparin, which directly interferes with the clotting cascade, with sodium warfarin, which blocks the hepatic synthesis of vitamin K-dependent factors II, VII, IX, and X, or with antiplatelet medications including nonsteroidal anti-inflammatory drugs, dipyridamole, sulfinpyrazone, dextran, or clofibrate. The clinical setting determines the drug to be used. Heparin and sodium warfarin limit the development of red thrombi in areas where blood flow is slow as in the fibrillating atrium. In areas where turbulent flow and stasis coexist, as over the surface of poorly contracting endocardium, a mixed thrombus consisting of platelets, fibrin, and red blood cells may form. This type of coagulation is also best prevented by heparin or sodium warfarin. White thrombi or platelet clots provide a surface for activation of other clotting factors and are characteristically formed in areas of rapid flow, as over ulcerated arterial plaques or through prosthetic valve struts. Platelets coming into contact with subintimal collagen or being traumatized by prostheses may extrude adenosinediphosphate and initiate coagulation. White thrombi are often prevented by antiplatelet medications.[1]

The risk of major or minor bleeding in patients receiving heparin is 20% when intermittent boli are used.[2,3] The Boston Drug Surveillance Program found this complication more common among elderly women. Constant infusion of heparin reduces the incidence of major bleeding sevenfold. This method of administration is equally effective in preventing emboli, and thus it increases the benefit-to-risk ratio.[3]

Of 231 patients on sodium warfarin followed in the Tucson Veterans Administration Hospital and University of Arizona anticoagulation clinic between January 1976 and May 1978, there were two patients (0.9%) with major bleeding requiring cessation of therapy and twenty-two patients (9.5%) with minor bleeding requiring dose adjustment. These figures are slightly better than those of other studies and indicate the need for both individualization and careful supervision of anticoagulant therapy.

SITUATIONS REQUIRING ANTICOAGULATION

Acute Myocardial Infarction:

The role of anticoagulation therapy in the management of patients with acute myocardial infarction has been disputed over 30 years. Recently, Chalmers *et al* reviewed 32 studies published since 1948, including 18 retrospective trials, 8 trials with nonrandomly assigned control groups

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From: Veterans Administration Hospital, 3601 S. Sixth St., Tucson, AZ 95723. Dr. Hager, Asst. Professor Medicine, Section of Cardiology, U of A Health Sciences Center.

and 6 prospective trials with randomly assigned controls.[5] The controversy[6] will continue, but every clinician caring for patients with acute myocardial infarction needs to assess the effectiveness of anticoagulation both on mortality and also on systemic embolic events which may leave clinical residua outweighing the compromise in left ventricular function.

Chalmers noted that the total case fatality was less in anticoagulated patients. Among the 6 prospective randomized studies, the pooled data from 3,854 patients showed a decrease in fatality from 19.6% to 15.4%, a 21% reduction. Data from the Veterans Administration Cooperative Study involving 999 patients and from the British Medical Research Council involving 1,427 patients showed a reduced, but not statistically significant, mortality among anticoagulated patients.[7,8] A large number of factors influence the hospital course of patients with infarction, and thus it is not surprising that the difference in mortality among anticoagulated patients had significance only when the pooled data from a large number of patients were available. Chalmers concluded that "the preponderance of evidence supports anticoagulation for the reduction of mortality, even though the reduction is small."[5]

The effect of anticoagulation on the incidence of systemic emboli is more dramatic. Among autopsy patients in the Veterans Administration Cooperative Study,[7] mural thrombi were less common among anticoagulated patients. In general, cerebrovascular accidents account for most clinically significant emboli during acute infarction, and this complication occurs in 2.5-3.8% of patients. Significant emboli to major arteries of the extremities, to the kidneys, or to the mesenteric vessels occur less frequently. Chalmers noted a significant reduction in the occurrence of thromboembolic events among anticoagulated patients in all trials. In the British Medical Research Council[8] study and in the VA Cooperative[7] prospective study, the incidence of strokes was reduced from 2.5 and 3.8% to 1.1 and .8% respectively, and the incidence of other systemic emboli was essentially zero among anticoagulated patients.

The development of major and minor hemorrhage in anticoagulated patients is more common. In the randomized control studies reported by Chalmers, hemorrhagic episodes included hemopericardium, hemoptysis, hematemesis, melena, hematuria, subcutaneous hemorrhage, and nasopharngeal bleeding. Heparin was not administered by constant infusion in these trials. Among the 3,854 patients in the six prospective studies, the incidence of hemorrhage was 8.4% in anticoagulated patients and 2.75% in the control group. Only one patient died secondary to hemorrhage in these six studies, and that patient was in the control population. The benefit of the statistically significant reduction in systemic embolization in anticoagulated patients outweighs the potential risk of hemorrhage.[5]

Anticoagulation therapy in patients with acute myocardial infarction is continued for three weeks, by which time the endocardial focus for mural thrombus should be healed. Therapy is initiated with heparin. An initial loading dose of 5,000 units intravenously is followed by a constant heparin infusion of 1,000 units per hour. A partial thromboplastin time is obtained before anticoagulant therapy and repeated four hours after starting heparin and then every 24 hours. The goal of therapy is to maintain the PTT one and a half times the initial value. Concomitantly, sodium warfarin is started by giving 5 mg daily and checking the prothrombin time every other day in the hospital. A loading dose of sodium warfarin is not necessary. Once prothrombin times have attained values 1.7-1.8 times the control, heparin is discontinued and oral anticoagulants are continued for 3 weeks.[9]

Each year in the United States, there are one million people who have acute myocardial infarctions, and 400,000 of these patients are discharged from the hospital. Of these, approximately 47,000 die suddenly within the first year. The incidence of sudden death after an infarction is highest in the first four to six months. Recently, the initial results of a cooperative trial using sulfinpyrazone in patients surviving acute myocardial infarction were reported.[10] Patients were maintained on sulfinpyrazone 200 mg four times a day starting 25-35 days after myocardial infarction and continuing for an average of 8.4 months. On a double-blind basis, 733 patients received sulfinpyrazone and 742 patients received a placebo. In the follow-up period, there were 68 cardiac deaths including 44 patients in the placebo group and 24 patients in the sulfinpyrazone group, giving an annual death rate of 9.5% and 5.1% respectively. There was an overall reduction in the death rate of 46.4% among the patients taking sulfinpyrazone. Among the patients dying suddenly, the annual death rate was reduced from 6.3% to 2.7% when the two groups were compared. Further information from this study will be forthcoming, but the interesting possibility suggested by the initial data is that the antiplatelet effect of sulfinpyrazone causes a decrease in mortality by preventing embolization of platelet clots into the coronary vasculature. The local ischemia generated by these platelet emboli may be responsible for the initiation of fatal arrhythmias. Further work on the contribution of antiplatelet therapy following acute myocardial infarction is needed.

Cardioversion:

The incidence of symstemic emboli with cardioversion achieved either pharmacologically or with DC electrocardioversion is 2-6%.[1,12] Emboli usually occur within 6 hours to 6 days of cardioversion.[11] Bjerkelund evaluated the role of anticoagulation therapy in preventing emboli among patients who were undergoing DC cardioversion for atrial fibrillation at a large referral center.[11] Two hundred and twenty-eight patients were on chronic anticoagulants at the time of treatment, and 209 patients were not. The risk of peripheral amboli was higher in the anticoagulated group since it included patients with a history of previous systemic emboli and more patients with congestive heart failure and rheumatic heart disease.

Among the patients successfully cardioverted, there was a 0.8% incidence of systemic emboli in those anticoagulated and a 5.3% incidence among those not anticoagulated. It was also apparent that embolic events were not unique to patients with rheumatic heart disease but occurred as frequently in those patients whose atrial fibrillation was idiopathic in etiology or secondary to atherosclerotic disease, congenital heart disease, or cardiomyopathy.

These data strongly suggest that patients undergoing elective cardioversion should have prophylactic anticoagulation. The exact time required for a left atrial clot to become organized and adherent to the endocardial wall is not known. A period of three weeks of anticoagulation before cardioversion is suggested. Most patients who revert to atrial fibrillation following cardioversion do so within three months, so it is reasonable to continue oral anticoagulation for three months following DC cardioversion and then to discontinue it in patients who maintain sinus rhythm. For patients who revert to atrial fibrillation within that period of time, a clinical decision is necessary concerning whether anticoagulation therapy should be continued because of the presence of chronic atrial fibrillation.

Rheumatic Mitral Valve Disease:

Twenty percent of patients with rheumatic heart disease have systemic emboli, and most emboli go to the brain. Patients with rheumatic mitral stenosis are far more prone to emboli than patients with aortic valve involvement or mitral regurgitation. The incidence of mortality with the first embolic episode is 15%, and 42% succumb to the second episode.[13] The timing of recurrent emboli is difficult to assess. In one study, the interval between embolic episodes varied from one day to eleven years, but the majority of recurrent episodes occurred within six months of one another.[14] The risk of emboli increases in patients over the age of 40, and 30% of patients with atrial fibrillation embolize. The incidence in patients having sinus rhythm is 7%. Likewise, there is a relationship between atrial thrombosis and rhythm. Eighty-seven percent of patients with atrial thrombosis are in atrial fibrillation.[13]

Anticoagulation decreases the incidence of systemic emboli. Although patients with rheumatic mitral stenosis who are in sinus rhythm have a lesser risk than patients in atrial fibrillation, if hemodynamic evaluation reveals a low-flow state consistent with significant mitral stenosis, or if the patients are over 40 years of age, anticoagulation is indicated. Certainly, patients with rheumatic mitral stenosis and atrial fibrillation require long-term anticoagulation.

CARDIOVASCULAR DISORDERS WITH INCREASED INCIDENCE OF SYSTEMIC EMBOLI

Atrial Fibrillation Secondary to Coronary Artery Disease:

Classically, systemic emboli in the presence of atrial fibrillation have been considered complications of rheumatic mitral valve disease, but several recent reports have shown a significant risk for patients whose atrial fibrillation is secondary to coronary artery disease. The Framinham Study noted that the incidence of stroke in patients with atrial fibrillation was increased 5.6 times.[4]

Aberg evaluated an autopsy series of 101 patients with valvular or congenital heart disease and 506 patients with primarily ischemic and hypertensive heart disease.[15] These patients had atrial fibrillation, and the necropsy findings of systemic emboli were compared to the findings in 642 control patients with ischemic heart disease and normal sinus rhythm. Among patients with atrial fibrillation, 53.5% of the valvular heart disease group and 41.7% of the patients with ischemic and hypertensive disease had evidence of systemic emboli. The incidence among the control group was 18.7%. Hinton et al also found an impressive incidence of systemic emboli among patients with ischemic heart disease and atrial fibrillation in an autopsy series of patients with clinically symptomatic emboli.[16] The occurrence of systemic emboli was 41% and 35% respectively in two groups of patients with atrial fibrillation, one with mitral valve disease and the other with ischemic heart disease. The embolic episodes had resulted in death in 26% of each group.

The average age of the patients with ischemic heart disease and atrial fibrillation in Hinton's studies was over 70 years, an age when the risk of anticoagulation therapy may be increased. Nevertheless, in these studies, it is clear that the incidence of systemic emboli is almost as common in ischemic heart disease as in rheumatic heart disease. A prospective study is needed in order to assess whether or not anticoagulation therapy would reduce the incidence of systemic emboli in patients with coronary artery disease and atrial fibrillation and to define which patients are at risk. For example, an increase in the left atrial size and the presence of left ventricular failure may enhance the chance for sluggish flow and left atrial thrombus formation. Until results from such a study are available and in the absence of major contraindications to anticoagulation therapy, patients with coronary artery disease who have had atrial fibrillation for more than a week, and who have an echocardiographic left atrial size greater than 4 cm. or left ventricular failure are candidates for chronic anticoagulants.

Asymmetric Septal Hypertrophy:

Henry et al reviewed the incidence of systemic emboli in 130 patients with asymmetric septal hypertrophy.[17] Atrial fibrillation did not correlate with the presence or absence of hemodynamic subaortic obstruction but was common among patients over 40 years of age and with enlarged left atria. Ten of 130 patients with ASH had systemic emboli. Nine of the 10 were among the 32 patients with chronic or paraxysmal atrial fibrillation. These data document the thrombo-embolic risk in patients with asymmetric septal hypertrophy. It is likely that anticoagulation may decrease the incidence of embolization. Patients over the age of 35 with an echocardiographic left atrial size exceeding 40 mm. appear to be candidates for chronic anticoagulation therapy, even in the presence of sinus rhythm.[17]

Sick Sinus Syndrome:

Thrombogenesis is enhanced by atrial asystole, marked sinus bradycardias, or atrial fibrillation. Rubenstein et al found a 19% incidence of systemic emboli among patients with sick sinus syndrome.[18] Nine episodes occurred among 33 patients with a definite tachy-brady syndrome, and 2 episodes occurred among 15 patients with documented sinus arrest. None of the 8 patients with a regular sinus bradycardia had emboli. Fairfax examined 100 patients with sinus bradycardia.[19] Eighty-four of these patients had a regular bradycardia, and 16 had, in addition, episodes of supraventricular tachycardia. Of the 16 systemic emboli occurring in these 100 patients, 15 were documented in the 16 patients with the tachy-brady form of the syndrome. Among 41 patients with complete heart block and an underlying atrial mechanism of flutter or fibrillation, there were 3 (7.3%) systemic emboli. The risk among 712 patients with complete heart block who had a normal sinus mechanism was only 1.3%. Fairfax noted that no embolic episodes occurred in patients under the age of 54 years.

Although patients with sick sinus syndrome are usually in the older age groups, those with a brady-tachy form of the syndrome or those with documented periods of prolonged asystole appear to be good candidates for chronic anticoagulation therapy. Patients who have only sinus bradycardia, with or without ventricular pacing, probably do not require anticoagulation.

Congestive Heart Failure, Congestive Cardiomyopathies, Acute Myocarditis:

Because of the increased venous stasis present in patients with congestive heart failure, venous thromboembolic disease is a significant problem.[20,21] In the hospital setting, low-dose heparin has been found to be very effective in decreasing the incidence of venous thromboembolic disease in these patients. Chronic anticoagulant therapy must be elected on an individual basis.

Patients with congestive cardiomyopathies secondary to alcohol, idiopathic in origin, or occurring in the post-partum period are known to have an increased incidence of mural thrombi as well as atrial arrhythmias.[1] Stringent criteria determining which of these patients should be anticoagulated are not available. However, patients who have had documented systemic emboli or who have significant symptomatology of left ventricular failure secondary to their cardiomyopathy should be maintained on chronic oral anticoagulants. In patients with an acute myocarditis or with only mild symptoms of left ventricular failure anticoagulants should be withheld.

Conclusion:

This review has concentrated on the value of anticoagulation in preventing systemic emboli. When patients are carefully selected for anticoagulant therapy, well informed regarding the complications, and managed in a clinic with adequate personnel to control therapy, the benefit-to-risk ratio increases. Therefore, it is essential to identify those factors which promote thrombus formation. Only then can criteria for anticoagulation be better defined. Infarcted myocardium, atrial fibrillation regardless of etiology, rheumatic mitral stenosis, and atrial asystole all contribute to thrombogenesis, and in the absence of obvious contraindications, patients having those cardiovascular disorders should be anticoagulated.

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Arizona
Medicine

CT Scanning

Federal government officials and the press have chosen the computerized tomographic (CT) scanner, usually referred to as $600,000.00 pieces of "x-ray" equipment, along with physician's fees, as targets of their simplistic attack to the complex problem of rising medical costs. The apparent implication is that CT scanning is a luxury.

Far from it. In the short span of four years CT scanning has established itself as an indispensable tool in the daily practice of neurology and emergency room medicine. Its use is accepted by neurologists across the country as a standard of good medical care. Failure to obtain an indicated CT scan of the head could subject the patient to the danger of permanent neurological deficit or actual loss of life. At best, such an omission could lead to unnecessary hospitalization costs and other expensive diagnostic procedures such as angiography which is not without risk or discomfort to the patient.

Physicians involved in litigation for having missed bilateral subdural hematomas in a comatose patient whose echoencephalogram was midline will probably regard the price of the scanner as inexpensive. Indeed, besides the personal tragedy, the costs of litigation and any award are passed along to the consumer, thus raising the cost of health care.

In an article on cost-effectiveness in the May 1977 issue of ARIZONA MEDICINE, Jose F. Laguna, M.D. and Norman N. Komar, M.D. showed how a community hospital saved $600,000.00 in diagnostic tests alone during the first fifteen months of operation of a CT head scanning unit.

Since that time, continuous demand for CT equipment and competition among manufacturing companies has resulted in prices below $100,000.00 for some basic units intended for emergency room use.

Cost-effectiveness and mediocolegal considerations, however, often neglect the plight of the individual patient who becomes reduced to a mere number in a world of statistics. CT scanning not only has saved health care dollars, but helped people and their suffering by providing increased knowledge of diseases and better patient care.

It has been a humbling experience to realize how often our clinical judgment errs in the diagnosis of stroke. Many cerebrovascular incidents we call ischemic are shown to be hemorrhagic with the new CT technique. The distinction is not merely academic, but critical, if anticoagulation therapy is being contemplated. Life saving surgery is now performed on some intracerebral hemorrhages which were untreated before. Other times, a conservative approach is used because we can see the precise size of the blood clot and its evolution.

Following the course of obstructive hydrocephalus, assessment of ventricular shunt function in children is now possible without hospitalization and painful intracranial air studies. Monitoring the development of communicating hydrocephalus in cases of chronic meningitis is of particular importance in this part of the country with its high incidence of coccidioidomycosis.

There is no substitute for CT scanning in the diagnosis of coma and the management of cranial trauma, an everyday occurrence at an emergency room.

CT scanning of the head is essential in the management of cancer today, whether defining the presence of cerebral metastases or showing the local extension of the tumor mass and the degree of boney involvement in carcinomas of the head and neck.

It is also in oncology that the full body scanner has best proved its usefulness. Such scanning provides an accurate assessment of the extension of bladder carcinoma and other pelvic malignancies which may result in radical changes of therapeutic approach. It is also an important technique to visualize malignancies and abscesses in the pancreas and the retroperitoneal space.

As our experience increases and technology evolves, we can expect benefits from the body scanner comparable to those already afforded by head CT scanning. The savings in lives and health care costs will be considerable This message must be brought to federal and local agencies attempting to determine which equipment should be allowed and how it should be used in the practice of medicine.

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Auxiliary Highlights

Because of the lack of Auxiliary authentification, this particular article should be prefaced by the phrase "it seems to me." The judgement relates to matters of health care costs, how to deal with them, and personal observations injected beyond the recognized concerned position of the Auxiliary.

Eliminating unnecessary usage of medical care not only provides elementary reduction of cost to the patient, but the recommendation's coming from physicians reflects a non-gouging attitude still shared by most. However, the philosophy to reduce costs by staying well, even with its obvious merit, somehow compares to reducing the cost of hay by not having a horse — assuming that the element of choice actually exists.

It would seem additionally reasonable to approach the problem at the consequence level and examine the basis of actual charges. If fees are set for service rendered, it is believable to include overhead costs as part of that service. Precise documentation of costs might be revealing to those setting fees. Either justification of prevailing charges or the need for house-cleaning could result. Genuine analysis of individual circumstances should produce factors easy to itemize and evaluate for worthiness in relation to the cost of doing business. From there, a fair fee can be determined to either substantiate or reduce the less than 19¢ of each health dollar currently reported as the physician's share.

Then would be the time to peer beyond our own practices with an eye toward challenging the other health-dollar participants to likewise qualify their charges and aim at downward adjustments.

Logically, reducing the greatest share-area of care cost would provide the most immediate advantage to the consumer. This directs attention toward hospital care costs now reported at nearly 40% of the health dollar. More than with any other second entity involved, availability of cost analysis of hospital care is accessible to doctors and communities alike.

In cleaning our own house, we become eligible to loan the broom to those who must help clean up the neighborhood in the common interest of postponing big brother's arrival with the federal vacuum.

Even limited power sparks energy. Have you really flipped your own switch? You may be surprised how far illumination spreads.

Mrs. Melvin W. (Jean) Phillips
Auxiliary Editor

Medical Bills High? Blame it on Chem 20

When I was in college there was an infamous course known as Chem 20.

Organic chemistry was the sieve into which was poured every pre-medical student in the university. But only those who came through it with an A or B could reasonably expect to get into medical school.

Chem 20, therefore, became a psychological lab exercise in pre-med anxiety. Every class was a combat mission. Each grade was a life or death matter. It reeked of Olympian anguish and Olympic competitiveness. It taught people whose goal in life was the relief of pain and suffering that only the fittest, the most-single-minded would survive.

I remember Chem 20 now whenever I read about President Carter's outrage at the medical establishment or when someone sardonically points out yet another MD plate on yet another Mercedes Benz, or when the National Council of Wage and Price Stability points out that the median income of doctors — $63,000 in 1976 — has risen fastern than any other group. In short, at times when other people talk about the MD as a license to make money, I think of the Chem 20 factor.

***

While there are thousands of others who work long hours to keep a toehold in solvency, there is no other professional training that is comparable in terms of sheer stress. So, many of the doctors are sustained through this training by one vision: The Big Payoff.

***

I know that we regard doctors as altruistic when they are treating us and avaricious when they are billing us. But I don't think we can understand the end results — high fees — unless we understand the process of selection and even self-selection by which people actually become doctors.

On the whole, doctors have made a commitment to go into medicine when they are 18 or 19 years old, with the full knowledge that they won't be practicing until they are 30 or older. In a Now Society they hold the record among their peers for delayed gratification. The sort of laid-back, noncompetitive person who wants to "live in the moment" would drop out of Chem 20 with an acute case of culture shock in a week.

It is the dedicated or the narrowminded (choose one from column A) who go through college competing for medical school and go through medical school competing for a good internship and go through internship competing for a good residency.

Today, residency is not the financial hardship it was when most practicing doctors in this country were young. Hospital Physician magazine says the average doctor in training earns $12,500 to $15,000. But it is still basically an emotional and physical endurance contest.

It is normal for a young doctor to work an 80-hour week. It is normal to work every other night and every other weekend. It is normal to be cut off for 10 years from anything approaching a rich personal life. It is normal to come to regard the world as a hierarchy and a ladder to be climbed. It is, after all, the Chem 20 factor.

While there are thousands of others who work long hours to keep a toehold in solvency, there is no other professional training that is comparable in terms of sheer stress. So, many of the doctors are sustained through this training by one vision: The Big Payoff. In this society, the Big Payoff is traditionally translated into dollars.

The result of the training process is doctors who are often as addicted to work as patients to morphine. And doctors who have come to believe that they are "worth" whatever fees they can charge because they "worked for it."

I suspect that they are searching — sometimes desperately and often futilely — for a return on the real investment they have made: Their Twenties.

So, the government may be right when it says that medical fees are spiraling because there is no free market economy in doctors. The law of supply and demand doesn't work very well in medicine.

But that is only half of the story. If they want to see the psychological side, they have to go deeper, back to where the system began, back as far as Chem 20.

By the way, the course is still being given. Only these days, I hear, there are pre-med students who won't even share their notes.

Ellen Goodman

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Continuing Medical Education

Ask not for whom the great bell of C. M. E. tolls, good doctor it tolls for you.

Since 1971, when our neighboring state of New Mexico began, "16 other states have authorized their licensing boards to require C. M. E. for medical licensure." M. Econ. Feb. 1978.

"C. M. E. how I love thee," is now the theme song of hospitals, medical schools, specialty societies and travel agents who tout their traveling seminars into the inner most depth of the peruvian jungle!

One writer entreats all staff members to support their hospital C. M. E. programs with this admonition with the words of Dr. Harold Jervey, executive secretary of the Federation of State Medical Boards: "I've heard rumors that the federal health bureaucracy wants to set minimal competency standards that physicians would be required to meet in order to treat Medicare and Medicaid patients. I wouldn't doubt that there's a secret draft paper somewhere in Washington right this minute."

The Connecticut State Medical Society's house of delegates voted against making continuing medical education a requirement for society membership.

Another romance in the neighboring Bay state, Massachusetts, began to lose luster. The Medical Tribune Feb. 15, '78 reports "Hardly a soul barked at the policy ending lifetime licensure and requiring renewal every two years and the State Society not only pledged to alert the board to more miscreants among its membership but it furnished the press with the names of doctors whose license had been revoked by the board."

But the board pushed too hard "when it asked doctors to answer questions as to age, education, and malpractice history." The "minute man" alertness has not all been lost since the red coats tangled with the minute men at Concord, "on the eighteenth of April in '75." The State Medical Board consisting of five doctors and two lay members backed out.

Arizona recently enacted legislation making continuing education a condition for medical relicensure. It strikes this observer as a heinous effrontery to deny the legal profession the same privilege for self agrandizement! Perhaps they who write and adjudicate the law understand its foibles!

Ask not for whom the law tolls, good doctor, it tolls for thee.

Dry Gulch Jake
(John W. Kennedy, M.D.)

Arizona Medical History Project

ROBERT FLINN LIBRARY MEDICAL HISTORY COLLECTIONS

The Arizona Medical History Project seeks to locate collections of private papers of Arizona physicians, past and present. In order to finish the medical history project, it is essential that we have access to more personally oriented papers, such as one would find in government, business, and other professions.

The Arizona Historical Society Library in Tucson evidently collected a number of valuable papers of physicians and surgeons for the 19th and early 20th centuries, but materials after 1940 are almost non-existent. No library has been collecting for that period, which is essential to understanding the development of the medical profession in Arizona.

Hence, the AMHP is making an appeal to doctors and their families to donate scrapbooks, manuscripts, letters, old ledgers, and other types of documentation which might help us gain greater insight into the workings of Arizona medicine in its period of greatest growth.

Since neither the University of Arizona Medical Library nor the Arizona Historical Society are particularly interested in building up a significant repository of medical history papers for this state, we have arranged with the Flinn Library to become depositor of all materials collected.

If you have any suggestions or leads, please call Marilyn Burbach at 257-0017.

Thank you.

G. Wesley Johnson

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Marshall B. Block, M.D.
Editor
Arizona Medicine

Dear Doctor Block:

In the series "Medicine in Mexico, Daschbach and Connolly assert that dipyrone is used extensively in Mexico as an analgesic despite warnings from the Mexican Secretariat for Public Health of the "unusually high risk of agranulocytosis with these dipyrone salts."[1] The authors fail to indicate whether this pharmaceutical is prescribed frequently by physicians or is frequently purchased by the public without a prescription. I get the impression that the authors are more concerned with the illegal purchase of pharmaceuticals without a physician's order. I hold that dipyrone is widely prescribed by physicians.

In 1938, aminopyrine and its methanesulfonate derivitive, dipyrone, were removed from the non-prescription drug list in the United States because of its potentially fatal bone marrow toxicity. This measure was based on experience with a North American patient population and "neither antipyrine nor aminopyrene has been subjected to adequately controlled clinical trial by current standards."[2]

Since this drug is widely administered by physicians in Central and South America (personal experience), reports of agranulocytosis should be found in the medical literature. I can discover not one.

I posit that either the clinical evidence for fatal agranulocytosis as a result of dipyrone administration is inconclusive or the factor for agranulocytosis is a genetic one in this instance and not found in the general genetic pool of the Central and South American population. Both hypotheses merit further investigation. Daschbach and Connolly should investigate the rationale of therapeutics in Latin America before pronouncing themselves.

I might also point out that the one reference for this article is incomplete. Although I have many publications of the Instituto Mexicano del Seguro Social, I was unable to locate the source of their data.

Thomas Brown, SDB, MD
Centro Medico San Jose
Taisha, Ecuador

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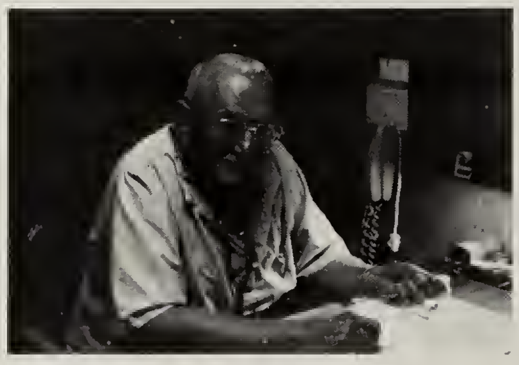
2. Woodbury, D.M. and Fingl, E., Analgesic — Antipyretics, Anto-Inflammatory Agents, and Drugs Employed in the Therapy of Gout, in Goodman, L.S. and Gilman, A. (Eds.), *The Pharmacologic Basis of Therapeutics* (5th Ed.), New York: MacMillan, 1975, 325-358.

In Memoriam



Martin C. Flohr, M.D.
1904-1978

Doctor Flohr was born in Washington, D.C., attended District schools and received his medical education at George Washington University School of Medicine (1924). He interned at Sibley Memorial Hospital in the District, came to Arizona and spent a year as resident physician at St. Joseph's Hospital in Phoenix.

Prior to this he served in the Civilian Conservation Corps on the North Rim, the South Rim and at Phantom Ranch down in the Canyon. Some of the present day trails were built at that time.

Following this he practiced with Dr. Floyd Sharp, in obstetrics, at the Grunow Clinic in Phoenix. From 1938-1953 he engaged in private practice in Tolleson, Arizona.

During World War II he served at Fort Bliss, Texas and Fort Huachuca, Arizona attaining the rank of Major. On his return to private practice he was, for many years, Director of the Out-Patient Clinic at the Maricopa County General Hospital. In 1953 the Maricopa County Medical Society cited Dr. Flohr in recognition of his long-time meritorious service to the County Hospital and his aid in securing accreditation for the hospital.

Dr. Flohr removed his practice to Williams, Arizona and remained there until his death 12 February 1978. In 1969 he suffered the loss of a leg but continued an active practice and a vigorous life style.

His professional and community interest were legion. He was a member of the Masonic orders, past president of the Williams Lions Club, Rotary Club, past president of the Williams, Grand Canyon Chamber of Commerce and past president of the Bill Williams Mountain Men, the town's largest civic booster group.

While a Mountain Man he made eleven horseback trips to Phoenix, and two trips to Washington, D.C. to represent the State of Arizona in the Inaugural parades for Presidents Kennedy and Johnson.

He was a charter member and first president of the Thunderbird Model Railroad Club of Phoenix; he was an astute student of Southwest history, the Civil War and WW II. He was a member of the Maricopa County Medical Society, the Coconino County Society, the Arizona and American Medical Associations. He was a longtime member of the Williams Hospital medical staff.

Survivors include his wife Helen, and daughters Carol (Flohr) Robinson and Lee (Flohr) Tichnor.

Martin brought professional competence with robust community activity to his adopted State.

John W. Kennedy, M.D.
History and Obituary
Editor

Important data on the pain of acute cystitis:

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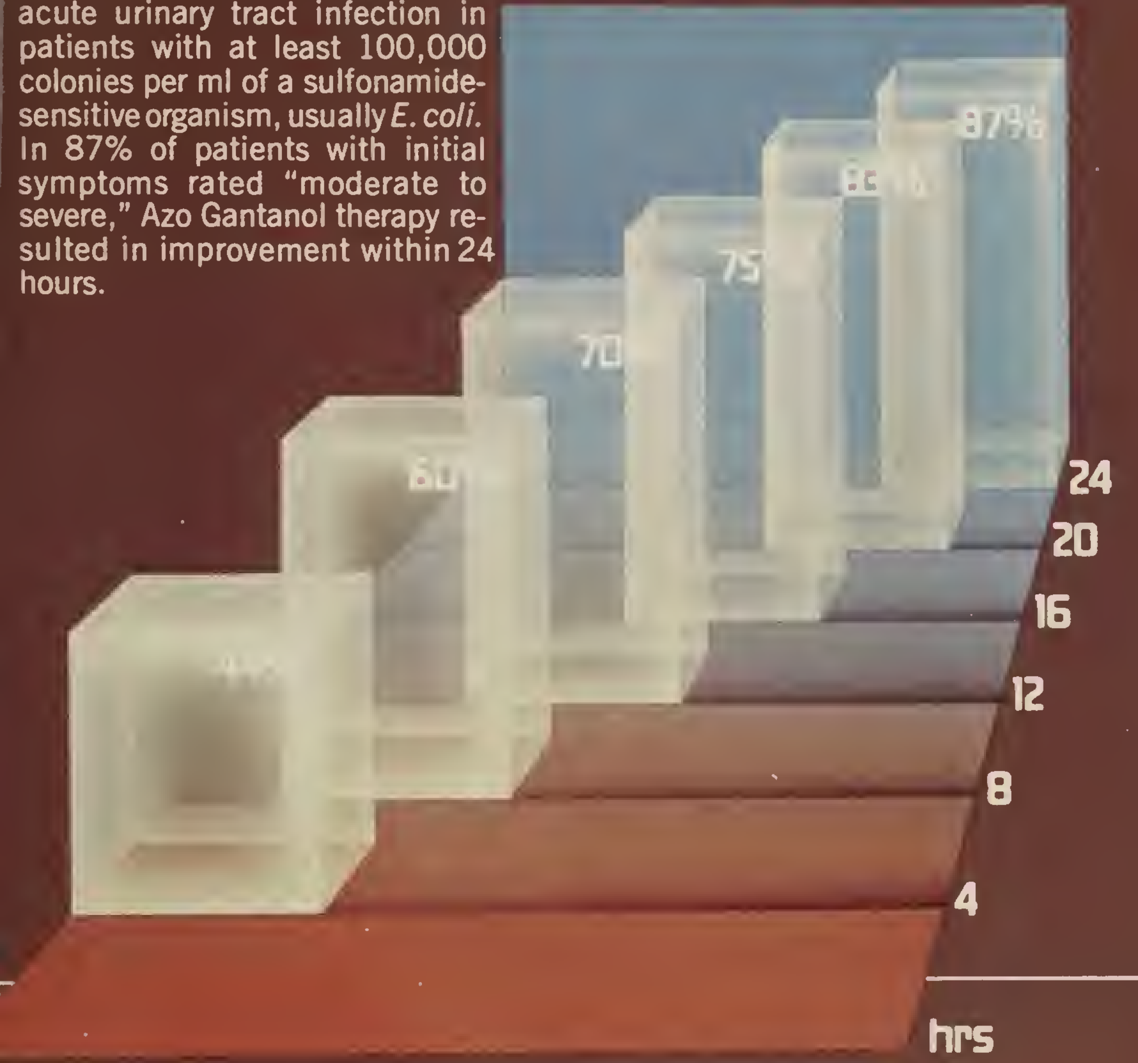

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for the pain **for the pathogens**

Before prescribing, please consult complete product information, a summary of which follows:
Indications: In adults, urinary tract infections complicated by pain (primarily pyelonephritis, pyelitis and cystitis) due to susceptible organisms (usually *E. coli, Klebsiella-Aerobacter, Staphylococcus aureus, Proteus mirabilis,* and, less frequently, *Proteus vulgaris*) in the absence of obstructive uropathy or foreign bodies. **Note: Carefully coordinate *in vitro* sulfonamide sensitivity tests with bacteriologic and clinical response; add aminobenzoic acid to follow-up culture media. The increasing frequency of resistant organisms limits the usefulness of antibacterials including sulfonamides.** Measure sulfonamide blood levels as variations may occur; 20 mg/100 ml should be maximum total level.
Contraindications: Children below age 12; sulfonamide hypersensitivity; pregnancy at term and during nursing period; because Azo Gantanol contains phenazopyridine hydrochloride it is contraindicated in glomerulonephritis, severe hepatitis, uremia, and pyelonephritis of pregnancy with G.I. disturbances.
Warnings: Safety during pregnancy not established. Deaths from hypersensitivity reactions, agranulocytosis, aplastic anemia and other blood dyscrasias have been reported and early clinical signs (sore throat, fever, pallor, purpura or jaundice) may indicate serious blood disorders. Frequent CBC and urinalysis with microscopic examination are recommended during sulfonamide therapy.
Precautions: Use cautiously in patients with impaired renal or hepatic function, severe allergy, bronchial asthma; in glucose-6-phosphate dehydrogenase-deficient individuals in whom dose-related hemolysis may occur. Maintain adequate fluid intake to prevent crystalluria and stone formation.
Adverse Reactions: *Blood dyscrasias* (agranulocytosis, aplastic anemia, thrombocytopenia, leukopenia, hemolytic anemia, purpura, hypoprothrombinemia and methemoglobinemia); *allergic reactions* (erythema multiforme, skin eruptions, Stevens-Johnson syndrome, epidermal necrolysis, urticaria, serum sickness, pruritus, exfoliative dermatitis, anaphylactoid reactions, periorbital edema, conjunctival and scleral injection, photosensitization, arthralgia and allergic myocarditis); *G.I. reactions* (nausea, emesis, abdominal pains, hepatitis, diarrhea, anorexia, pancreatitis and stomatitis); *CNS reactions* (headache, peripheral neuritis, mental depression, convulsions, ataxia, hallucinations, tinnitus, vertigo and insomnia); *miscellaneous reactions* (drug fever, chills, toxic nephrosis with oliguria and anuria, periarteritis nodosa and L. E. phenomenon). Due to certain chemical similarities with some goitrogens, diuretics (acetazolamide, thiazides) and oral hypoglycemic agents, sulfonamides have caused rare instances of goiter production, diuresis and hypoglycemia. Cross-sensitivity with these agents may exist.
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NOTE: Patients should be told that the orange-red dye (phenazopyridine HCl) will color the urine.
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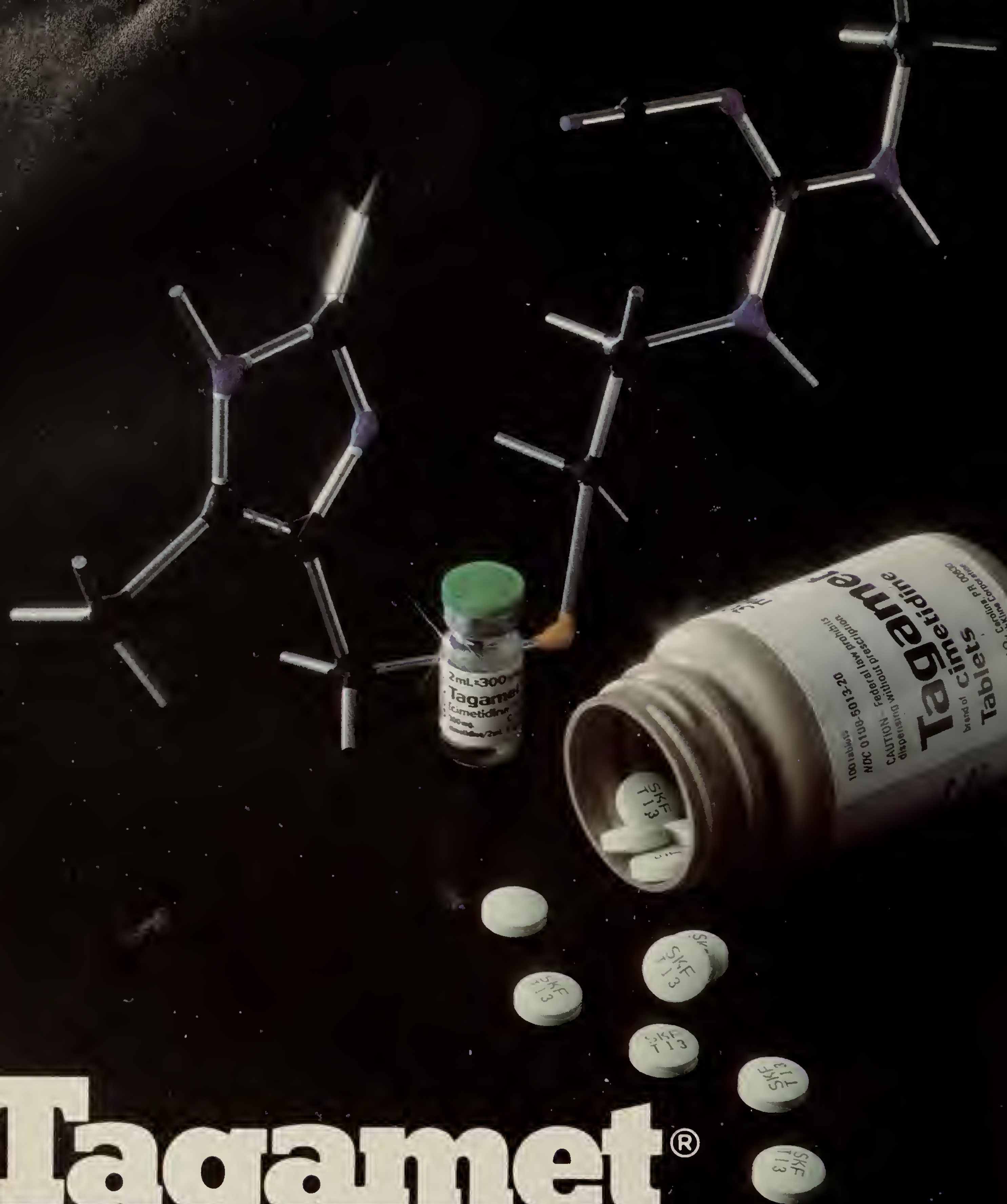
*Data on file, Hoffmann-La Roche Inc., Nutley, New Jersey 07110.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ArMA Reports

THE MINUTES APPEARING IN THIS SECTION HAVE BEEN EDITED TO CONSERVE SPACE. A COMPLETE COPY OF THE MINUTES OF ANY MEETING WILL BE MAILED TO ANY MEMBER REQUESTING THEM.

The meeting of the Articles of Incorporation and Bylaws Committee of the Arizona Medical Association, Inc., held at 810 W. Bethany Home Rd., Phoenix, Arizona on Saturday, June 24, 1978, a quorum being present, convened at 2:02 p.m., Charles E. Henderson, Chairman presiding.

RESOLUTION 8-78
REDUCED DUES FOR THE NEW PHYSICIAN JUST STARTING PRACTICE IN ARIZONA

Dr. Henderson presented substitute resolution as amended by the House of Delegates on April 29, 1978. The resolution is as follows:

RESOLVED, That the Articles of Incorporation and Bylaws Committee of this Association be directed to prepare the necessary bylaws changes that would make it possible for the newly established physician to become a member of the Association by reduction of dues structure as determined by the Board of Directors and that the new dues structure be acted upon at the next regular or special session of the House of Delegates; and be it further

RESOLVED, That the component county medical societies and the American Medical Association be encouraged to adopt a similar dues reduction in coordination with the state Association.

The committee reviewed report of the AMA Board of Trustees to the House of Delegates was adopted during the most recent House of Delegates meeting, as well as the Arizona delegates resolution to the AMA. It is noted that the position adopted by the AMA is "reduce AMA dues by 50% for one year for physicians first entering practice." It is presumed that this policy will begin with the 1979 billing year. The House of Delegates also referred to the Board of Trustees for consideration, the subject of allowing a physician to have a reduction of 50% dues during the first year of membership so long as he joins during the first 5 years of practice. Also, the Board of Trustees is taking under consideration a resolution that when a state medical society has adopted unified membership, which makes AMA membership mandatory, the billing for AMA dues shall be 95% of the established rate for all membership categories.

IT WAS MOVED AND CARRIED TO RECOMMEND TO THE BOARD OF DIRECTORS THE FOLLOWING RESOLUTION TO OFFER A REDUCTION IN DUES FOR NEW MEMBERS TO 50% FOR THE FIRST YEAR OF MEMBERSHIP IN THE ARIZONA MEDICAL ASSOCIATION:

"Section 3. Equality Within Membership Categories of Dues and Assessments: -

While the amount of dues or special assessments may vary as between classifications of membership (except as to certain classes upon which none may be levied as provided in subsection 5 hereof), they shall be uniform within each classification, except for service, intern, and resident active members (see Chapter 11, Section 3), AND NEW MEMBERS (SEE CHAPTER IX, SECTION 4).

"Section 4. New Members; Dues; Assessments; Collection and Payment: -

"(a) THE DUES OF NEW MEMBERS SHALL BE ONE-HALF THE ANNUAL DUES FOR THE YEAR IN WHICH THEY FIRST BECOME A MEMBER.

"(b) The dues of new members elected between July first and November first shall be one-half THEIR *(the)* annual dues for that year. New members elected in November and December shall pay dues for the succeeding year, which payment shall be taken also to include dues for the balance of the current year. Any forgiveness of the dues and assessments of the American Medical Association shall be in accordance with the rules and regulations of that association, and any forgiveness of special assessments shall be according to such as may have been provided by the meeting of the House levying such special assessment.

"(c) The secretary of each county society shall collect and forward the dues of new members to the Association Secretary. Membership in the Association shall not be effective until the same are received by the Association Secretary."

Future Medical Meetings

CONTINUING MEDICAL EDUCATION

The following institutions and organizations have been accredited for their continuing medical education programs by the Liaison Committee on Continuing Medical Education.

Arizona Heart Institute
Arizona Medical Association, Inc.
Arizona State Hospital, Phoenix
Desert Samaritan Hospital, Mesa
Good Samaritan Hospital, Phoenix
Health Maintenance Associates
Phoenix Indian Medical Center
Phoenix Psychiatric Council
Maricopa County General Hospital, Phoenix
Memorial Hospital, Phoenix
St. Luke's Hospital & Medical Center, Phoenix
St. Joseph's Hospital & Medical Center, Phoenix
Tucson Hospitals Medical Education Program, Tucson
U of A College of Medicine
Veterans Administration Center, Prescott
Veterans Administration Hospital, Phoenix

The accredited institutions and organizations above produce a variety of continuing medical education programs. Each accredited institution and organization is responsible for designating which of these programs meet ArMA's requirements for Category 1 credit. Physicians who participate in programs which are designated Category 1 by accredited institutions will receive Category 1 credit toward the ArMA Certificate in CME and the AMA's Physician's Recognition Award.

Individual program listings below indicate Category of CME. Where not indicated, no credit has been approved. For further information on any programs, contact person named.

SEPTEMBER

General Staff Quarterly Meeting

September 20, 1978, 6 p.m., Chimney's Restaurant, Glendale, AZ. Sponsor: Glendale Samaritan Hospital. Contact: Richard Haynes, M.D., Glendale Samaritan Hospital, 6010 West Northern, Glendale, AZ 85301. Approved for 2 hours of category 1 credit.

Perinatal/Neonatal Conference of Northern Arizona

September 29 & 30, 1978. Little America, Flagstaff, AZ 86002. Sponsor: Flagstaff Hospital and Arizona Perinatal Program. Contact: Gerald McMahon, M.D., 1215 N. Beaver, Flagstaff, AZ. Approved for 12 hours of category 1 credit.

OCTOBER

Arizona Assoc. of Medical Assistants

October 5, 1978, Arizona Medical Assoc. building, 810 W. Bethany Home Rd., Phoenix, AZ. Contact: Marylou Broxson, Publicity Chairman, 13235 N. 24th Ave., Phoenix, AZ 85029. Call 264-2101 Ext. 277.

Arizona Regional Meeting American College of Physicians
October 6 & 7, 1978. Registry Resort Hotel, Scottsdale, AZ. Contact: Richard Brooks, M.D., Arrangement Chairman, 3600 W. 3rd Ave., Phoenix, AZ 85013. Approved for 9 hours of category 1 credit.

NOVEMBER

Arizona Medical Assistants Assoc., Maricopa Chapter, Fall Symposium
November 4, 1978, Arizona Medical Assoc. building, 810 W. Bethany Home Rd., Phoenix. Contact: Pauline Vanryn, 943-3562 evenings; 264-3503 days.

Fourth Annual Pediatric & Adolescent Echocardiography Course
November 10-12, 1978. Las Vegas, Nevada. Sponsored by American Society of Echocardiography, American Institute of Ultrasound in Medicine & H.E.L.P. Contact: Pediatric Echocardiography Course, 4340 Placita Panuco, Tucson, AZ 85718. Approved for category 1 credit.

Arizona Medical Assistants Assoc.
All Day Symposium & Organization Meeting November 11, 1978, Roadway Inn, Lake Havasu. Contact: Lucile Bowden, Havasu. Contact: Lucile Bowden 838-0205 or Kay Wilde 264-0993.

Proposition 13 and Health Care: An Analysis of Impact
November 11-12, 1978, Sheraton-Palace Hotel, San Francisco, CA. Sponsor: University of California, San Francisco. Contact: Ms. Mae Ling Yee, Univ. of California, San Francisco Continuing Education in Health, 1308 Third Ave., San Francisco, CA 94143.

26th Annual Meeting of the Medical Society of the United States and Mexico
November 15-18, 1978. Guadalajara, Jalisco, Mexico. Contact: Mrs. Carolyn Parsons, Exec. Secy., 3161 N. Pantano Rd., Tucson, AZ 85715.

The Executive Physician Development Conference: Management in the Framework of Accounting & Finance
November 13-17, 1978. Arizona Inn, Tucson, AZ. Sponsor: U of A College of Medicine. Office of Continuing Medical Education and Outreach. Contact: Anthony F. Vuturo, M.D. Approved for 50 hours of category 1 credit.

DECEMBER

New Trends in Surgery: Arizona Chapter American College of Surgeons Annual Conference
December 1 & 2, 1978. Doubletree Inn, Scottsdale, AZ. Sponsor: Arizona Chapter of Surgeons. Contact: James J. Berens, M.D., 550 W. Thomas Rd., Phoenix, AZ 85013. Approved for 12 hours of category 1 credit.

7th Annual Seminar "Pulmonary Diseases - Part II"
December 9 & 10, 1978. Camelback Inn, Scottsdale, AZ. Sponsor: Maricopa County General Hospital. Contact: Alex Newman, M.D., Program Chairman, Dept. of Radiology, Maricopa County General Hospital, 2601 E. Roosevelt St., Phoenix, AZ 85008. Approved for 14 hours of category 1 credit.

1979

JANUARY

Critical Care of Neurological and Neurosurgical Emergencies
January 25-27, 1979. Camelback Inn, Phoenix, AZ. Sponsor: St. Joseph's Hospital and Medical Center, Barrow Neurological Institute. Contact: Richard A. Thompson, M.D., Chairman, 350 W. Thomas Rd., Phoenix, AZ 85013. Approved for category 1 credit.

FEBRUARY

Selected Topics in Neuroradiology
February 7-9, 1979. San Diego, CA. Sponsor: San Diego Radiology Research & Education Foundation and the American College of Radiology. Contact: Mary J. Ryals, Radiology, P.O. Box 2305, La Jolla, CA 92038. (714) 453-7500, Ex. 3711. Approved for 22½ hours of category 1 credit.

16th Annual Meeting of the Federation of Western Societies of Neurological Science, Inc.
February 22-25, 1979. Mountain Shadows, Scottsdale, AZ. Contact: Larry Stern, M.D., Program Chairperson, U of A Dept. of Neurology, Tucson, AZ 85721.

Pediatric Update 1979
February 26 - March 1, 1979. Scottsdale Sheraton Inn, Scottsdale, AZ. Sponsor: St. Joseph's Hospital & Medical Center, Phoenix, AZ. Contact: Tracy L. Trotter, M.D., Dept. of Pediatric Education, St. Joseph's Hospital & Medical Center, 350 West Thomas Rd., Phoenix, AZ 85013. Approved for 16 hours of category 1 credit.

MONTHLY OR WEEKLY

Headache Rounds
Tuesday afternoons or Thursday mornings weekly. Sponsor: Headache Group of the Southwest. Contact: Peggy Voigt, 2610 W. Bethany Home Rd., Phoenix, AZ 85017, or phone 242-6646.

Shrine Medics Meeting
Second Tuesday of each month, Doctors Hospital, 5:45 p.m., J. South Classroom. Sponsor: Shrine Medics. Contact: Robert C. Briggs, M.D., 5121 N. Central Ave., Phoenix, AZ 85012.

Office Psychiatry for the Primary Provider
2nd Monday of month, 4811 N. 7th Street, Phoenix, AZ. Sponsor: Arizona Health Plan. Contact: T.R. Bittker, M.D., Box 5000, Phoenix, AZ 85010. Approved for category 1 credit.

Counter Transference Group
Weekly, Thurs. 8-10 p.m. Sponsor: Phoenix Psychiatric Council. Contact: James E. Campbell, M.D., 5051 N. 34th St., Phoenix, AZ 85018. Approved for 2 hours category 1 credit.

Monthly Meeting of Tucson Radiologists
Last Tues. of month. Plaza International, Tucson, AZ. Sponsor: U of A Medical Center, Dept. of Radiology. Contact: Irwin M. Freundlich, M.D., Arizona Medical Center, Dept. of Radiology, Tucson AZ 85724. Approved for 2 hours category 1 credit.

Pediatric Grand Rounds
Tuesday 7:30-8:30 a.m. in Phoenix: 1st Tues.—Phoenix Indian Hospital, 2nd Tues.—Maricopa County Hospital, 3rd Tues.—Good Samaritan Hospital, 4th Tues.—St. Joseph's Hospital. Sponsor: Maricopa County Hospital (Phoenix Hospital's Affiliated Pediatric Program). Contact: J. Kipp Charlton, M.D., 2601 E. Roosevelt, Phoenix, AZ 85008. Approved for 1 hour per session category 1 credit.

Review of Forensic Pathology, Current Case, Special Topics
Thursday, weekly, 11 a.m., 120 S. 6th Ave., Phoenix, AZ. Sponsor: Arizona Society of Pathologists. Contact: H.H. Karnitschnig, M.D., 120 S. 6th Ave., Phoenix, AZ. Approved for 1 hour per session category 1 credit.

Staff Education Conference
Wednesdays, weekly, 1 p.m., Arizona State Hospital, Phoenix, AZ. Sponsor: Arizona State Hospital. Contact: Howard E. Wulsin, M.D., Arizona State Hospital, 2500 E. Van Buren, Phoenix, AZ 85008. Approved for 1 hour per session category 1 credit.

BARROW NEUROLOGICAL INSTITUTE

Medical Education
Barrow Neurological Institute of St. Joseph's Hospital and Medical Center, 350 W. Thomas Road, Phoenix, AZ 85013. Sponsor: St. Joseph's Hospital & Medical Center. Contact: John R. Green, M.D. Approved for 1 hour category 1 credit.

Neurology Teaching Conference
Tuesdays, 8:30-9:30 a.m., Eighth Floor Conf. Room.

Neurosurgery Morbidity Conference
Wednesdays, 8:15-9:15 a.m., on first and third weeks, Eighth Floor Conference Room.

Neuro-ophthalmology Conference
Tuesdays, 11:30 a.m. in neuropathology conference room.

Spinal Injury Conference
Wednesdays, 8:15-9:15 a.m., on second and fourth weeks, in Neuropathology Conf. Room—a multidisciplinary review of admission by neurosurgeons, orthopedists, and rehabilitation specialists.

Neuropathology of Gross Specimens Conference
Thursdays, 7:30-8:30 a.m. in the Morgue.

Neurology-Neurosurgical Clinical-Neuroradiological and Neuropathological Conference
Fridays, 8-9 a.m., First Floor Conference Room.

Neuropathology or Neuroradiology Conferences
Fridays, 9 a.m., Neuropathology in Neuropathology Conference Room, Neuroradiology in First Floor Conference Room.

Neurorehabilitation Conference
Tuesdays, noon, 8th Floor Conference Room.

Neurosurgical Journal Club
Saturdays, 9-11 a.m., in Eighth Floor Conference Room.

CAMELBACK HOSPITAL

5055 N. 34th St., Phoenix, AZ 85018. Sponsor: Camelback Hospital. Contact: Medical Director.

Patient Staffing Conference
Three times weekly.

DESERT SAMARITAN HOSPITAL

Wednesday evenings, 7 p.m. Sponsor: Desert Samaritan Hospital. Contact: L.A. Rosati, M.D., Laboratory, Desert Samaritan Hospital, Mesa, AZ 85202. Approved for category 1 credit.

GOOD SAMARITAN HOSPITAL

Clinical Cancer Conference
3rd Wednesday, every month, Butler Bldg. Conference Room, Good Samaritan Hospital. Contact: John A. Bruner, M.D., 926 E. McDowell Road, Phoenix, AZ 85006. Approved for 1 hour per session category 1 credit.

GOOD SAMARITAN HOSPITAL

Pulmonary Disease Grand Rounds
Mondays, 12 Noon, D-5 North Conference Room, Good Samaritan Hospital, Phoenix, AZ. Sponsor: Pulmonary Disease Teaching Service, Good Samaritan Hospital. Contact: Bernard E. Levine, M.D., Pulmonary Function Laboratory, Good Samaritan Hospital, 1033 E. McDowell Road, Phoenix, AZ 85006. Approved for 1 hour category 1 credit.

MARYVALE SAMARITAN HOSPITAL

Continuing Medical Education Program
Maryvale Samaritan Hospital, every other Wednesday, 7-8 a.m., January 25, 1978 through December 27, 1978. Sponsor: Medical Staff of Maryvale Hospital. Contact: Richard C. Christensen, M.D. Approved for 1 hour per session category 1 credit.

MARICOPA COUNTY GENERAL HOSPITAL

2601 E. Roosevelt, Phoenix, AZ 85008. Sponsor: Maricopa County General Hospital. Contact: H.F. Lenhardt, M.D., Dir. of Medical Education. Approved for category 1 credit.

Total Joint Replacement
Oct. 27 & 28, 1978. Maricopa County General Hospital.

7th Annual Radiology Seminar "Pulmonary Diseases Part II"
Dec. 9 & 10, 1978, Camelback Inn, Scottsdale, AZ 85253.

Recent Advances in Geriatric Psychiatry
January 20, 1979. Maricopa County General Hospital.

5th Annual MCGH Urological Seminar
January 27 & 28, 1979. Doubletree Inn, Scottsdale, AZ 85251.

Current Advances in Obstetrics and Gynecology
Feb. 14, 15 & 16, 1979, Scottsdale Hilton Hotel, Scottsdale, AZ.

Medical Progress: A Review of Advances in Medicine in the Past 5 Years
Feb. 22, 23 & 24, 1979. Carefree Inn, Carefree, AZ 85331.

The Head presented by Department of Radiology, Feb. 9, 10 & 11, 1979. Doubletree Inn, Scottsdale, AZ 85251.

MEMORIAL HOSPITAL

1201 S. 7th Ave., Phoenix, AZ 85036. Sponsor: Memorial Hospital. Approved for category 1 credit.

Monthly Medical Education Seminar
Third Monday, 6:30 p.m., Kiva Conference Room. Contact: George Scharf, M.D.

Tumor Board Conference
Every Friday at Noon, Kiva Conference Room. Contact: Howard Kimball, M.D.

SCOTTSDALE MEMORIAL HOSPITAL

7300 E. 4th St., Scottsdale, AZ 85251. Sponsor: Scottsdale Memorial Hospital. Contact: W.S. Williams, M.D., Director of Medical Education.

Clinical Pathological Conference
4th Monday, monthly, 12:45 p.m.

Family Practice Conference
1st Monday, monthly, 12:45 p.m.

Medical Grand Rounds
3rd Monday, monthly, 12:45 p.m.

Morbidity & Mortality Conference
2nd Monday, monthly, 12:45 p.m.

ST. MARY'S HOSPITAL & HEALTH CENTER

1601 West St. Mary's Rd., Tucson, AZ 85703. Sponsor: St. Mary's Hospital & Health Center. Contact: see below.

Cardiology Conference
Every Friday 8-9 a.m., Century Room A. Contact: Anthony L. Forte, M.D.

Monthly Specialty Conference of the Department of Surgery
First Monday, monthly, 7:30 a.m., Century Room A. Contact: Medical Staff Office. Approved for 1 hour of category 1 credit.

Grand Rounds: Medical, Surgical, Family Practice, Pathology, Radiology
Weekly, Thursday, 7-8:30 a.m. Contact: Richard A. Silver, M.D. Approved for 1 hour category 1 credit.

U OF A HEALTH SCIENCES CENTER

Tucson, AZ 85724. Sponsor: U of A College of Medicine. Contact: See below. Approved for category 1 credit.

Clinical Immunology, Allergy & Rheumatology Rounds
Every Friday, Noon-1 p.m. Contact: John Boyer, M.D., Dept. of Internal Medicine

Cerebrovascular Disease Conference
Mondays, 5-6 p.m., weekly, Room 5505. Contact: Wesley Moore, M.D., Depts. of Surgery, Neurology & Radiology.

Dean's Clinical Rounds
October 18, 1978, Main Auditorium, UAHSC. Contact: Louis J. Kettel, M.D.

Endocrinology Seminar
Every Thursday, Noon-1 p.m., 1st, 3rd & 5th Thursday, Room N318, VA Hospital. 2nd & 4th Thursday, Room 6505, Tucson Medical Center. Contact: Dept. of Internal Medicine.

Hematology-Oncology Clinical Conference
Every Tuesday, Noon-1 p.m., 1st, 3rd & 5th Tuesdays, Room 6505, Tucson Medical Center. 2nd & 4th Tuesdays, Room N318, VA Hospital. Contact: Sidney Salmon, M.D., Dept. of Internal Medicine.

Joint Thyroid Clinic Conference
1st & 3rd Wednesdays of every month. AHSC, Rm. 6505. Contact: Sidney Werner, M.D., Dept. of Internal Medicine/Endocrinology Section.

Medical Grand Rounds
Every Wed., Noon-1 p.m., 1st, 3rd & 5th Wed., Staff Conf. Room, VA Hospital. 2nd & 4th Wed., Room 5403, UAHSC. Contact: Jay Smith, M.D., Dept of Internal Medicine.

Nuclear Medicine
Thursday, 7:30 a.m., Radiology Conf. Room, UAHSC. Contact: Irwin M. Freundlich, M.D., Dept of Diagnostic Radiology.

Neurology Grand Rounds
Every Friday, Noon, 1st, 3rd & 5th Fridays, UAHSC, Room 7505. 2nd & 4th Fridays, VA Hospital. Contact: William A. Sibley, M.D., Dept. of Neurology.

Neuropathology Review Conference
Thursdays, 8:30 a.m., Room 5120, UAHSC. Contact: Peter C. Johnson, M.D.

Neurosciences Seminar
Every Friday, 7:30 a.m., UAHSC, Room 7505. Contact: Colin R. Bamford, M.D., or Jose F. Laguna, M.D., Dept. of Neurology.

Pathology Seminar
Friday, 4:30-5:30 p.m., Room 5120, UAHSC. Contact: Kenneth Ryan, M.D., Dept. of Pathology.

Tucson Pathologist Conference
First Monday of the month, 7:30-9 p.m. Rotation between Tucson Pathology Conf Rooms. Contact: Merel Clard, M.D., Tucson Pathologists.

Pediatric Grand Rounds
Every Tuesday, 12:30-1:30 p.m. Alternates between Tucson Medical Center & UAHSC. Contact: Hugh Thompson, M.D., Dept. of Pediatrics.

Problem Case Workshop
3rd Monday of each month, 7:30 a.m., Room 4410, UAHSC. Contact: H.E. Cross, M.D., Ph.D., Div. of Ophthalmology.

Psychiatric Grand Rounds
Every Wednesday, Sept. to May 4, 5:30 p.m., Room 8403 UAHSC. Contact: Alan Levenson, M.D., Dept. of Psychiatry.

Chest Radiology
Monday, 5-6 p.m., weekly, Room 1535F, UAHSC. Contact: Irwin M. Freundlich, M.D., Dept. of Radiology.

Gastrointestinal Radiology
Mondays, 7:30 a.m., weekly except for summer months. Contact: Irwin M. Freundlich, M.D., Dept. of Radiology.

Radiation Oncology Planning Conference
Friday, weekly, 8:30-10 a.m., UAHSC, Room 0655. Contact: Robert S. Heusinkveld, M.D., Radiation Oncology Section.

Radiology-Rheumatology Conference
Thursday, 8 a.m., UAHSC, Library Room 1535C. Contact: Irwin M. Freundlich, M.D., Dept. of Radiology.

Vascular Radiology
January-June 1978, 7:30 -8:30 a.m., every Friday. Contact: Irwin M. Freundlich, M.D., Dept. of Radiology.

Radiology Interesting Case Conference
Thursday, Noon, VA Hospital. Contact: Irwin M. Freundlich, M.D., Dept. of Radiology.

Resident's Conference
Wednesday, weekly 5-6 p.m., Diag. Radiology Conf. Room. Contact: Irwin M. Freundlich, M.D., Dept of Radiology.

Trauma Conference
Every Thursday, 4-5 p.m. UAHSC, Room 5505. Contact: Martin Silverstein, M.D., Dept. of Surgery.

Grand Ward Rounds—Trauma
Every Tuesday, 8 a.m., UAHSC. Contact: Martin Silverstein, Surgery Dept., Trauma Section.

Monthly Meeting Tucson Ultrasonography Group
First Wednesday of month, 4:30-5:30 p.m., UAHSC. Contact: Irwin M. Freundlich, M.D.

Tucson Urological Society Scientific Meeting
Monthly. Contact: George W. Drach, M.D., Depts of Surgery & Urology.

General Urology Conference
Tuesday, 5-6 p.m. Thursday, Noon-1:30 p.m., UAHSC Meeting Rooms & VA Hospital. Contact: George W. Drach, M.D., Dept. of Surgery/Urology Section.

VETERANS ADMINISTRATION HOSPITAL

7th Street and Indian School Rd., Phoenix, AZ 85012. Sponsor: VA Hospital. Contact: Jasper L. McPhail, M.D. Approved for category 1 credit.

Cancer Symposium
Each Wednesday, 1 p.m., T-5.

Cardiology Conference
2nd Thursday, 1 p.m., T-5.

Medical-Surgical Chest Conference
1st and 3rd Thursday, 1 p.m., T-5.

Clinicopathology Conference
4th Thursday of 3rd Mo. (Mar., June, Sept. & Dec.), 1 p.m., T-5.

Dermatology Conference
1st, 2nd & 3rd Wednesday.

Hepathology Conference
2nd and 4th Tuesday, 1 p.m., 2128.

Gastroenterology Conference
1st and 3rd Tuesday, 1 p.m., T-5.

GI Conference
(Special Program with U of A Consultants) 4th Friday, 1 p.m., T-5.

GI Radiology Clinical Correlation Conference
Each Tuesday, 1 p.m., T-5.

Medical Surgical GI Conference
1st & 3rd Friday, 2 p.m., 2128.

Medical Service Grand Rounds
Each Friday, 11 a.m., T-5.

Surgery-Pathology Conference
Each Thursday, 7 a.m., 2128.

Urology-Pathology Conference
Each Wednesday, 7 a.m., 2128.

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Therapy: Pinciples and Use of Drugs
January 22-26, 1979, at Stanford

This course, suitable for all physicians, will be an intensive review of the modern concepts of drug action and of the practical aspects of the use of a large variety of pharmacologic agents. Tuition: $290.

Basic Science for Clinicians
February 26-March 2, 1979, at Stanford

This comprehensive review of basic science is designed to expand the clinician's knowledge of molecular biology. Tuition: $290.

Cancer
March 26-30, 1979, at Stanford

The present knowledge of the pathogenesis of cancer and clinical aspects of diagnosis, classification, staging, and management of malignant disorders will be reviewed in this course, which is intended for all physicians and surgeons who deal with problems related to neoplastic disease. Tuition: $290.

Management of the Surgical Patient
Late April 1979—date to be announced, at Mauna Kea Beach Hotel, Kamuela, Hawaii

This course is designed for all physicians—both surgeons and nonsurgeons—who participate in the care of surgical patients. Tuition: $290; room deposit: $130; total: $420, payable to Stanford.

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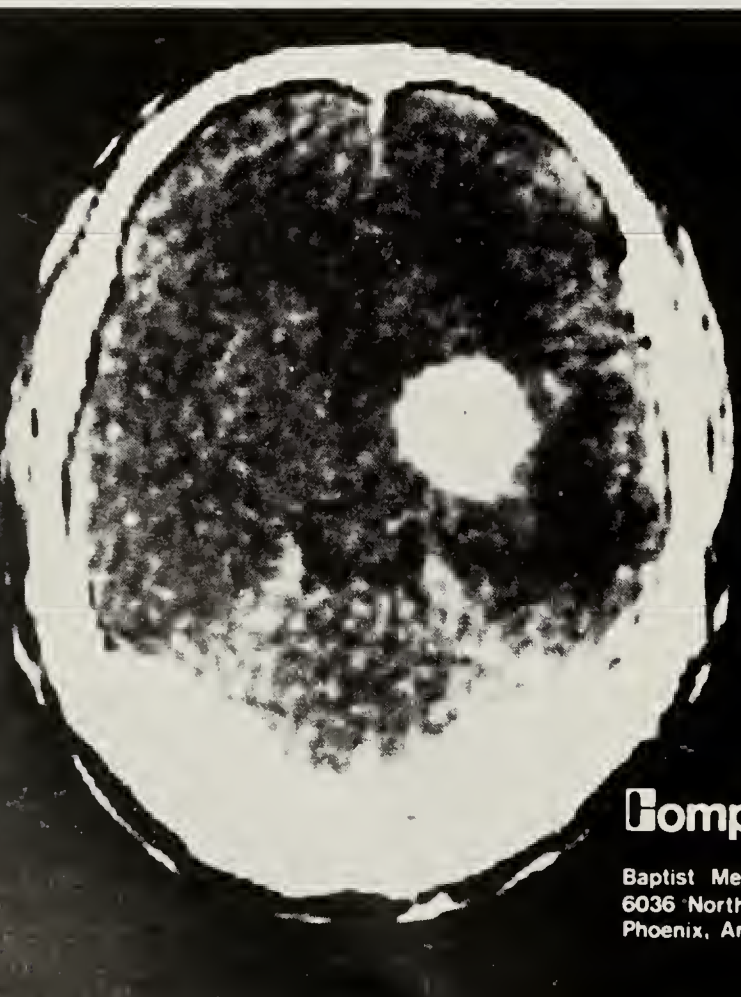

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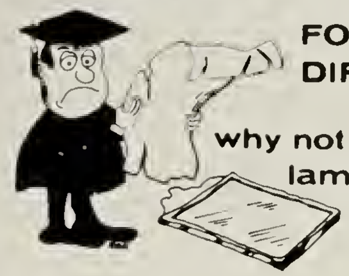

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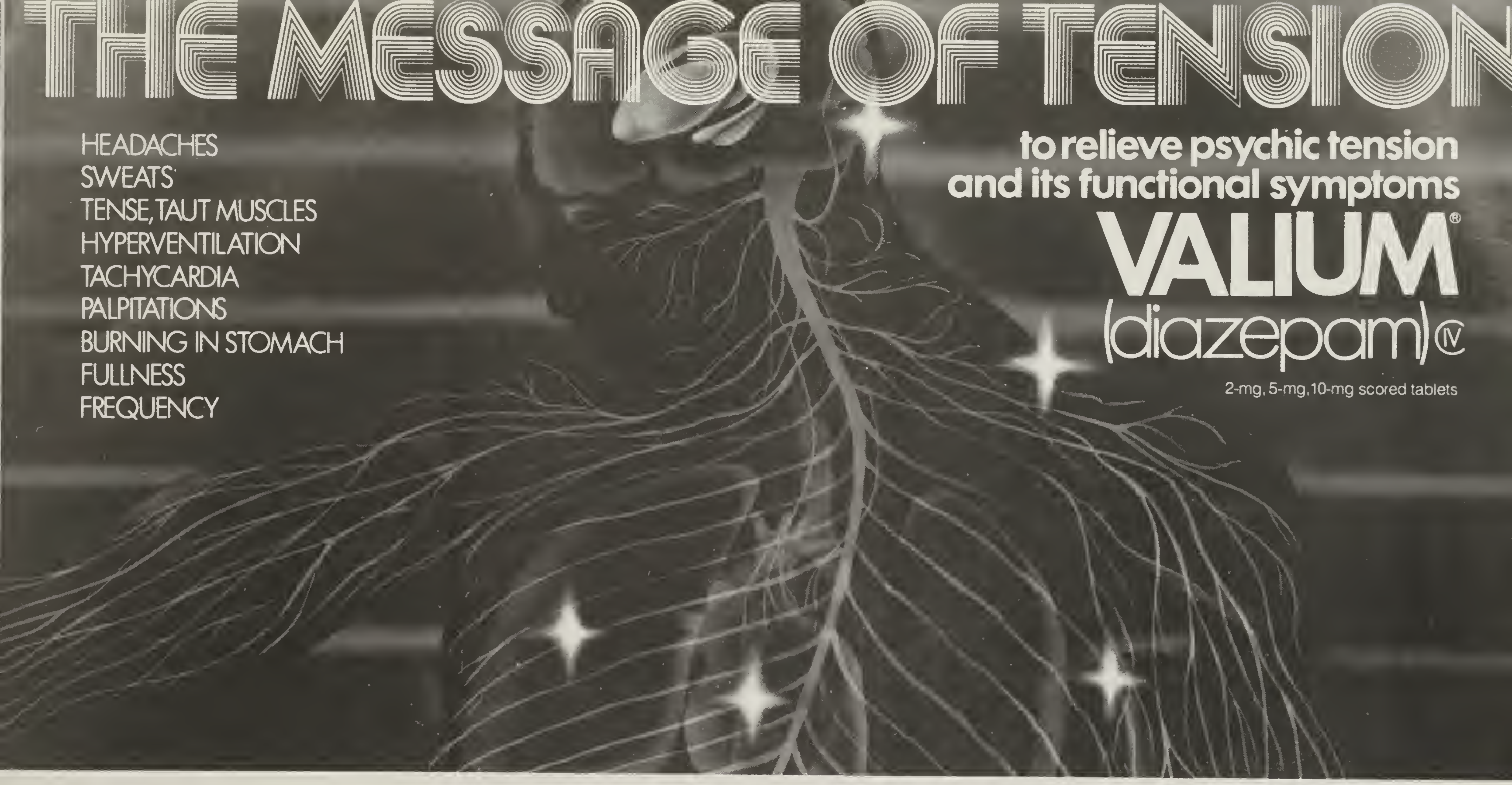

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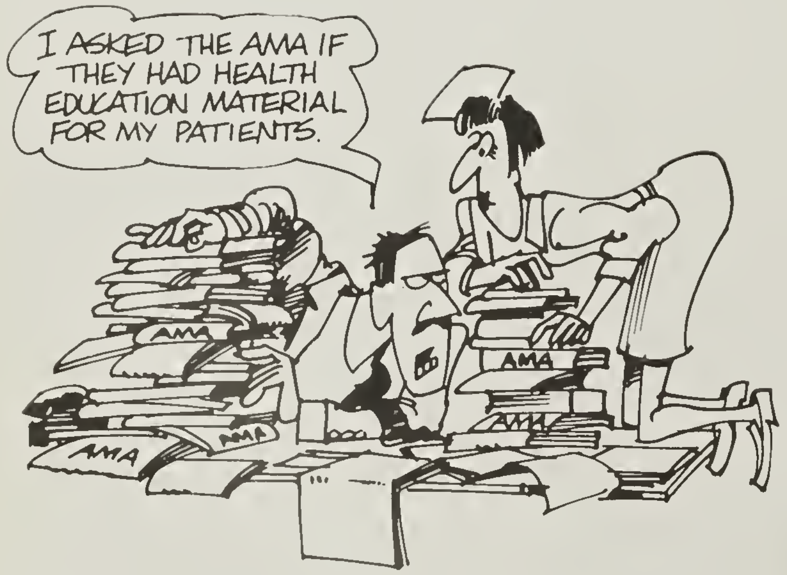
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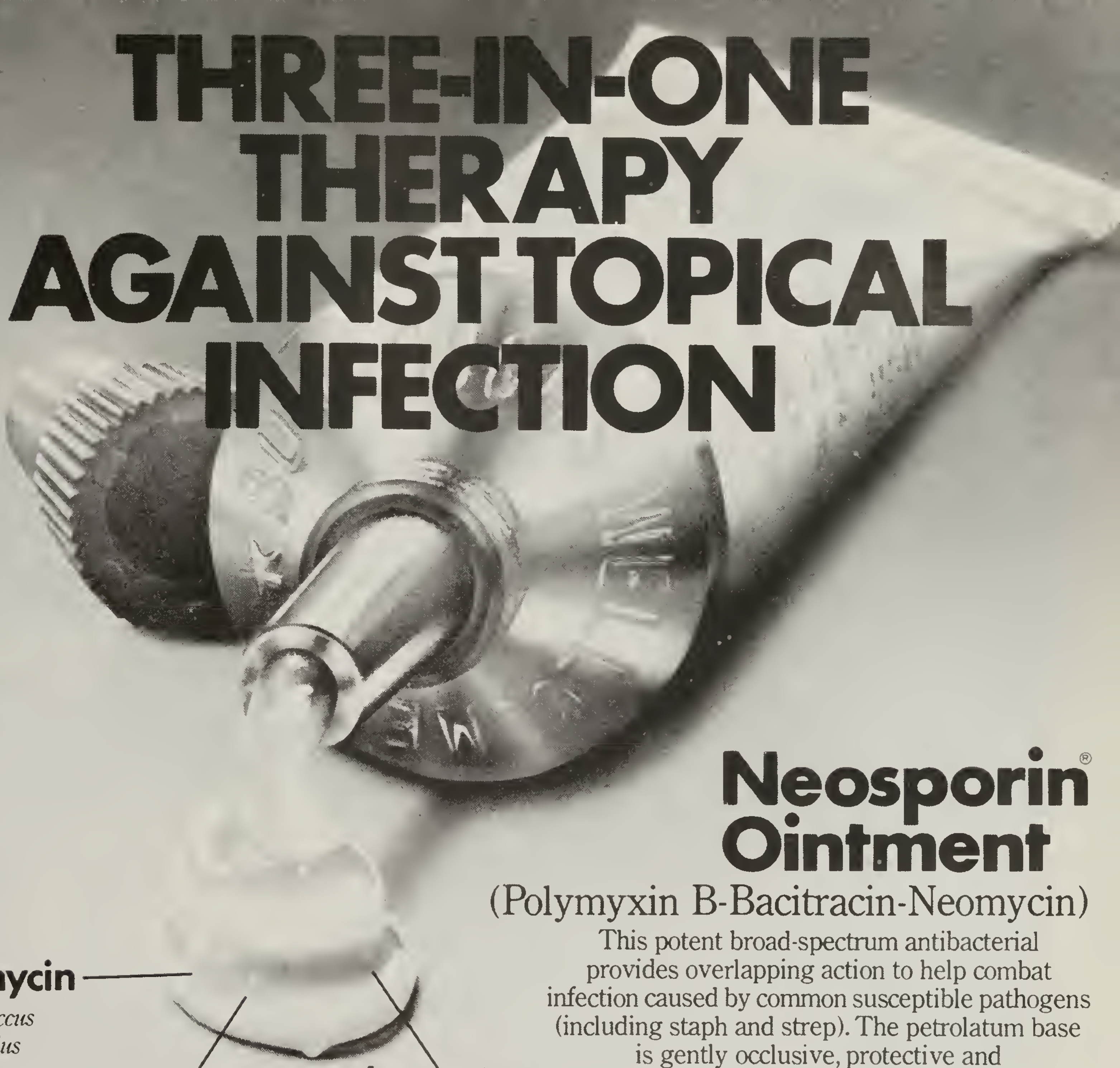

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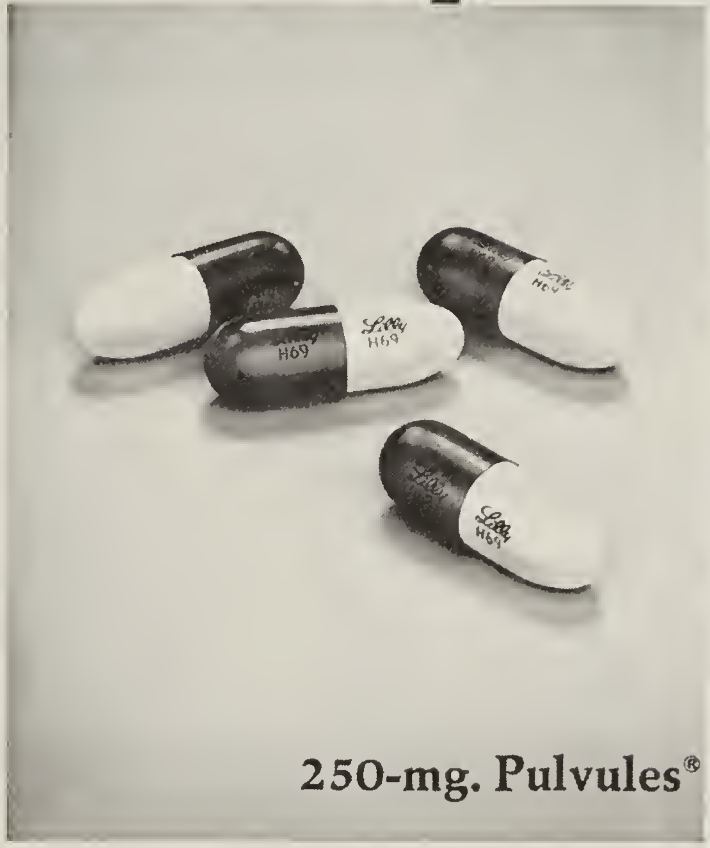

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***Usage in Pregnancy:* Use of minor tranquilizers during first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy. Advise patients to discuss therapy if they intend to or do become pregnant.**

As with all anticholinergics, inhibition of lactation may occur.

Precautions: In elderly and debilitated, limit dosage to smallest effective amount to preclude ataxia, oversedation, confusion (no more than 2 capsules/day initially; increase gradually as needed and tolerated). Though generally not recommended, if combination therapy with other psychotropics seems indicated, carefully consider pharmacology of agents, particularly potentiating drugs such as MAO inhibitors, phenothiazines. Observe usual precautions in presence of impaired renal or hepatic function. Paradoxical reactions reported in psychiatric patients. Employ usual precautions in treating anxiety states with evidence of impending depression; suicidal tendencies may be present and protective measures necessary. Variable effects on blood coagulation reported very rarely in patients receiving the drug and oral anticoagulants; causal relationship not established

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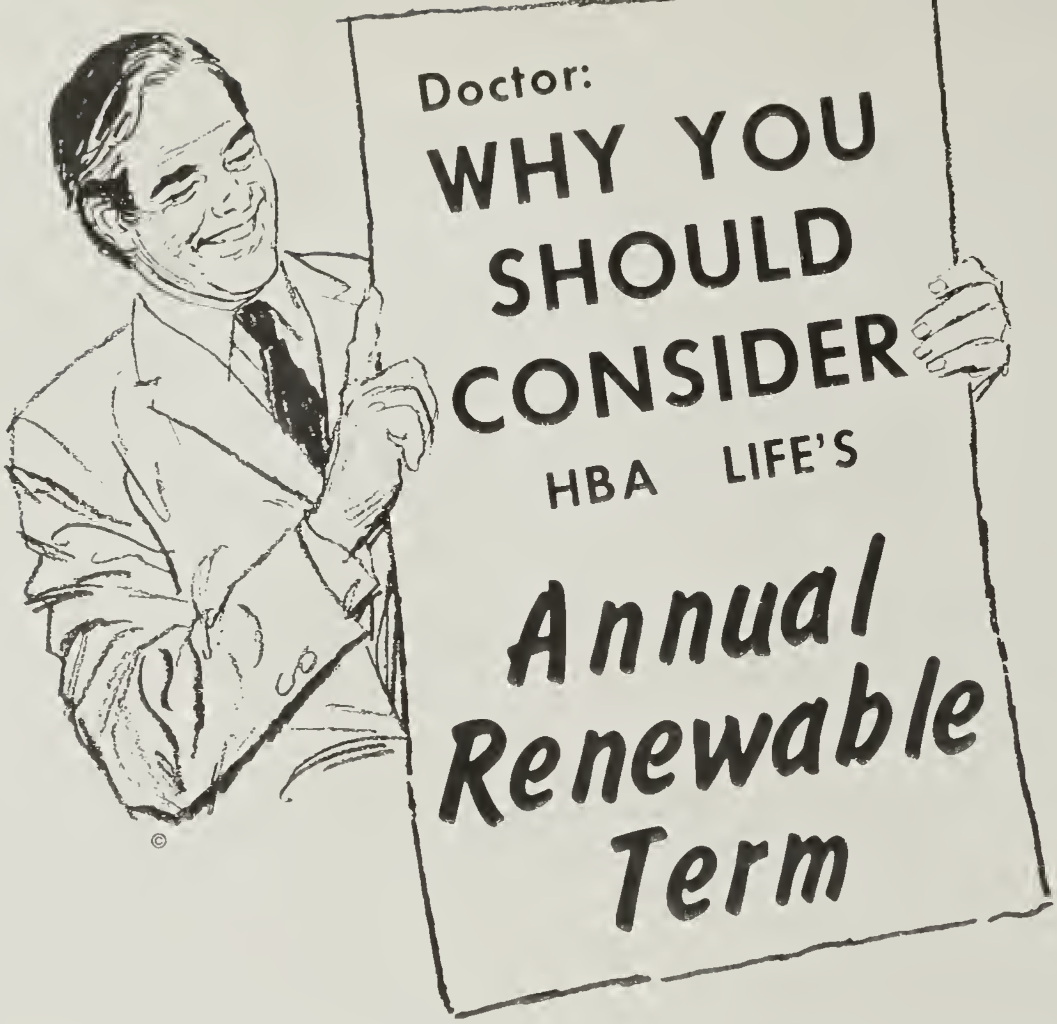

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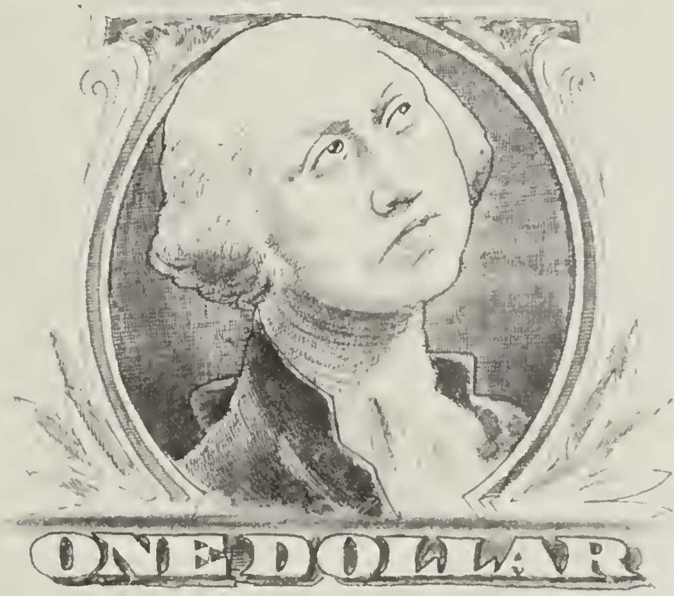

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NEWS LETTER

VOL. 18, NO. 1, MAY, 1978

AUTOMATIC BLOOD PRESSURE DEVICES

A Chicago Department of Health report on the Vita-Stat automated blood pressure machines concludes that their consistency and accuracy is sufficient for screening purposes.

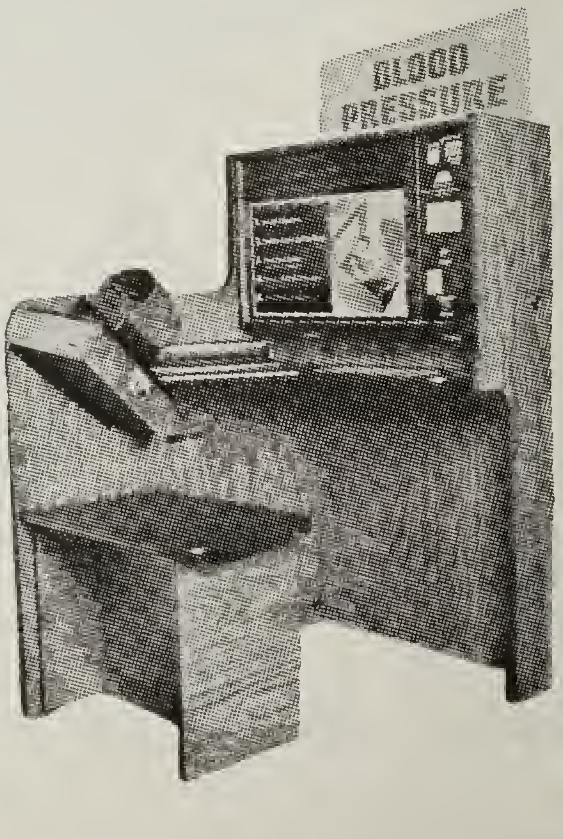
The report, the first in the nation based on a scientific study by a public agency, was prepared under the direction of Dr. David M. Berkson, the Department's heart disease control officer. It consists of (1) a statistical evaluation by Drs. Shekelle and Raynor of Rush-Presbyterian St. Luke's Medical Center, based on data collected over a four month period by Lawrence Shireman and Thomas Whipple and their co-workers in the Health Department, and (2) an evaluation of the results with recommendations for regulatory actions if deemed necessary. The report notes at the outset that any assessment of automatic blood pressure devices must compare their measurements with measurements by trained observers recorded by the traditional cuff ausculatory method. Since blood pressure may vary rapidly, the assessment of accuracy of measurement is difficult.

"In our evaluation of the Vita-Stat machine," the report states, "we found that, when the machine and a trained observer measure blood pressure simultaneously, there is a very good agreement." It is essential, however, that a machine must perform well in sequential measurement with trained observers as well as in simultaneous measurement. In sequential measurement the machine, in general, has a fair degree of accuracy. It does not perform as well, however, as trained technicians. In the laboratory analysis of the comparison between one machine and several technicians the machine tended to read systolic pressure 3.4mm higher and diastolic pressure 2.3mm lower. In the field analysis the machine tended to read systolic blood pressure 1.5mm and diastolic pressure 0.5mm higher than the technicians.

Although agreement between technicians in mean blood pressure measurement and in categorizing persons as normal, borderline or hypertensive tends to be closer than technician-machine agreement, these differences are small and of little practical significance in screening.

The report recommends that if licensing is insituted by the City of Chicago, periodic recalibration and testing should be required. The public must be informed that these instruments serve merely as screening devices; that they do not replace medical consultation and that, because blood pressure is subject to variation, several elevations or lack of elevations do not constitute a diagnosis of hypertension or normotension.

Blood pressure readings must be interpreted by a qualified medical professional and self-adjustment of medication based on automated blood pressure readings without medical supervision may be dangerous. The report concludes "that although the Vita-Stat machine does not perform as well as trained technicians, its consistency and accuracy is sufficient for screening purposes."



Seminars in Chest Medicine

Oxygen Administration in the Home

Editors:
Robert J. Clark, M.D.
Lynn M.Taussig, M.D.
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There is an increasing demand for the use of supplementary oxygen in the home for certain patients with chronic pulmonary disease. This is the result of both a growing awareness of the potential beneficial effects of oxygen administration and recent technologic developments that make home oxygen therapy more practical than it was in the past. Because clinical investigation in this field is continuing, the indications for oxygen therapy as well as the manner, time, and duration of administration will no doubt change. A statement at this time based on current knowledge should prove useful to practicing physicians and to sources of third-party payment.

Chronic obstructive pulmonary disease (COPD) is the most common illness for which oxygen administration in the home may be required, but the indications are by no means confined to this condition. No matter what the underlying cause, there should always be evidence of arterial hypoxemia based on direct measurement, or tissue hypoxia based on clinical assessment or measurement of mixed venous oxygenation, before consideration is given to long-term oxygen administration.

In COPD, indication for oxygen administration has generally been based on arterial Po_2 values consistently 50 to 55 mm Hg, at rest while breathing air. Arterial Po_2 should be measured on several occasions after discontinuation of smoking and with the patient receiving optimal therapy other than oxygen.[1-10]

There is now evidence to suggest that a single standard of arterial Po_2, below which supplementary oxygen is indicated, may not be applicable to all patients with COPD.[11] Certain patients with less severe arterial hypoxemia may benefit from long-term oxygen therapy. These patients should have evidence of tissue hypoxia as manifested by reduced mixed venous oxygen tension or by one or more of the secondary conditions related to tissue hypoxia, including (1) pulmonary hypertension, (2) cor pulmonale, (3) increasing severity of hypoxemia with exercise, (4) exercise limited by hypoxia and relieved by oxygen, and (5) polycythemia. All of these conditions need not, of course, be present in each patient.

Oxygen therapy in the home has usually been given through nasal cannulas at flows between 1 and 4 liter per min delivered 24 hours per day. More recently, the administration of oxygen for shorter periods of 15 to 18 hours per day has been shown to alleviate pulmonary hypertension, whereas 12 hours per day was unsuccessful in the small series of patients.[12-14] On the other hand, polycythemia did not recur when oxygen was administered for only 8 hours at night to a group of patients whose hemoglobin concentration had been previously reduced during a period of hospitalization.[15] These studies suggest that less than 24 hours per day of oxygen administration may be adequate, but how much less is not yet known.

The arterial oxygen saturation decreases to very low values during sleep in some patients with COPD.[16-18] Electrocardiographic monitoring has demonstrated the occurrence of arrhythmias possibly related to this sleep-induced hypoxemia.[19] Some of the patients reported in this study did not meet the criteria for continuous oxygen therapy on the basis of their arterial Po_2 while awake, which suggests that monitoring of arterial oxygen saturation during sleep is worthwhile and may form the basis for selection of patients for oxygen therapy during sleep who do not require it while awake. Nocturnal hypoxemia should be suspected in patients with pulmonary hypertension and polycythemia whose daytime arterial Po_2 does not decrease below 50 mm Hg.

In some patients with COPD, severe arterial hypoxemia may result from muscular exercise, although at rest arterial Po_2 may be only moderately decreased. When this occurs and has been documented by measurement of arterial oxygenation during exercise, it is reasonable to prevent the hypoxemic episodes and enhance the capacity

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This statement was developed to be of use to the American Lung Association's nationwide plan for the control of chronic obstructive pulmonary disease (COPD). Reprinted from *American Review of Respiratory Disease*, Vol. 115, No. 5, May 1977. Provided by and reprinted with the permission of the Arizona Lung Association, 1239 E. McDowell Rd., Phoenix, AZ 85006.

for exercise by oxygen administration.

In some patients with severe COPD, particularly those with chronic respiratory acidosis, oxygen administration in relatively high concentrations may result in ventilatory depression, a further increase in arterial P_{CO_2}, and eventual carbon dioxide narcosis. However, at the low rates of flow that have been used in long-term oxygen therapy, even though an increase in P_{CO_2} may occur, it has been well tolerated. Therefore, the presence of chronic carbon dioxide retention and respiratory acidosis is not considered a contraindication to the domiciliary use of oxygen in such patients.

From the studies thus far reported, it cannot be concluded that long-term oxygen administration prolongs life in patients with COPD or that it is entirely free of toxic effects on the lungs. However, there is no evidence to suggest that it shortens life, and the alleviation of symptoms and improvement in quality of existence that it affords would seem at present to outweigh any potential hazards.

Finally, conditions other than COPD that produce hypoxemia, such as restrictive diseases of the lung or cardiac failure, may also require the use of oxygen at home. Often, these abnormalities are associated with large volumes of ventilation, and the rate of flow of oxygen required to correct the hypoxemia may be large. Fortunately, equipment is now available for home use that can deliver higher concentrations of oxygen for a long period of time without requiring the replenishment of standard oxygen cylinders.

In summary, the indications for chronic home oxygen therapy are COPD and other conditions that cause hypoxemia. Sampling of the arterial blood is essential to demonstrate hypoxemia and to assess the benefits of oxygen therapy. Only in rare instances can chronic oxygen therapy be justified without quantitative evidence of arterial or tissue hypoxia. The indications for chronic oxygen therapy should be reassessed periodically, and the patient should remain under close medical supervision.

This statement was prepared by the Oxygen Therapy Committee of the ATS Scientific Assembly on Clinical Problems. The committee members are as follows:

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Seminars in Endocrinology and Metabolism

Metabolic Effects of Alcohol

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All of us are aware of the profound effect alcohol can have on the liver. Alcoholism is common in our society and in other societies of the world. Besides hepatic failure, alcohol can cause pancreatitis, malabsorption, neurological deficits, psychiatric disorders, myopathies, anemias, infertility, infections, vitamin deficiencies, malnutrition, depressions, psychosis, cardiomyopathy, and a whole host of social maladjustments. This paper will concentrate on the more common metabolic problems encountered with alcohol abuse.

CARBOHYDRATE METABOLISM

Glucose intolerance is seen in chronic alcoholic patients that have hepatocellular damage. The glucose intolerance very often is quite mild and may revert towards normal once alcohol is withdrawn. In some cases malnutrition may be one of the contributing factors that impair glucose tolerance.

Hypoglycemia

Fasting hypoglycemia induced by alcohol is not very common, but can be a serious disease. It usually develops in a chronically malnourished person or in someone who has been deprived of food for many hours and ingests large amounts of alcohol. The patient may be very stuporous or can be in a frank coma. Blood studies indicate a very low blood sugar, and there may be little evidence of hepatocellular damage. Serum insulin levels are appropriately suppressed and serum glucagon, cortisol and growth hormone levels are appropriately elevated. Persons who consume low carbohydrate, high protein diet, which is not uncommon today, are more prone to develop this condition due to the lack of carbohydrate intake. Also, it should be kept in mind that children who consume large quantities of alcohol, even if they have had a fairly adequate intake of calories, are particularly prone to develop alcoholic fasting hypoglycemia. Alcohol induced fasting hypoglycemia carries a very high mortality if it is not identified and corrected. Mortality is reported at 10% in adults and 25% in children.

The mechanism for fasting hypoglycemia is thought to be due to the inhibition of gluconeogenesis by alcohol. Treatment should include the use of glucose to rectify the hypoglycemia and, if necessary, intravenous hydrocortisone and mannitol to reduce cerebral edema. If the patient is dehydrated at the time, hydration will be of importance as well.

It is important to remember that the recovery from hypoglycemia caused by insulin in a diabetic who has been drinking is further impaired. The delay in the recovery from hypoglycemia is not fully understood but may be again mediated through the lack of adequate counter-regulatory hormones and poor gluconeogenesis.

There is a study that showed that alcohol and sugar (gin and tonic) caused reactive hypoglycemia. This being the case then alcohol with sugar can cause reactive hypoglycemia, at least in susceptible individuals. Thus, it would be wise for patients not to have alcohol prior to or during a glucose tolerance test.

Ketoacidosis

When we speak of ketoacidosis, the most frequent disorder thought about is diabetic ketoacidosis. However, a common cause of ketoacidosis is induced by the ingestion of alcohol. It has been reported that up to 20% of the cases of ketoacidosis hospitalized were caused by alcohol. The presenting symptoms are very often similar to diabetic ketoacidosis and include nausea, vomiting, dehydration, mental confusion, even coma. When the patient is examined and laboratory results are obtained, a low arterial Ph and plasma bicarbonate are found. In

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addition, an anion gap is noted due to the organic acids. The anion gap is made up primarily of betahydroxybutyrate in the plasma and to a much lesser extent acetoacetate. It's important to remember that most laboratory tests for ketone level measure acetoacetate and not betahydroxybutyrate. Therefore, if a test for serum acetone is obtained, a low level may be measured, but if you have a history of alcoholism or heavy alcoholic drinking, alcohol induced ketoacidosis should be considered.

The presumed cause for alcoholic ketoacidosis is the result of reduced oxidation of free fatty acids or increased hepatic fatty acid synthesis. As a result, the triglyceride levels are frequently elevated as well.

LIPID METABOLISM

Alcohol is a major cause of secondary hyperlipidemia. It's not uncommon to see triglyceride levels elevated rather significantly. A few patients are very susceptible to small quantities of alcohol and will increase their triglycerides considerably. Some of these patients will then develop acute pancreatitis. Those patients who have primary hypertriglyceridemia seem to be particularly prone to increasing their triglyceride levels beyond the already existing high levels. These patients should be encouraged not to consume alcohol but if they do to have their triglycerides measured after the consumption of alcohol.

The characteristic hyperlipidemia caused by alcohol is hypertriglyceridemia. Hypertriglyceridemia is associated mainly with elevations of the very low density lipoproteins (VLDL). According to Frederickson's criteria, it would be considered a Type 4, but it could also fit into Type 5. Many of the people with elevated triglycerides are social drinkers or daily drinkers of small quantities of alcohol. However, it is important that if hyperlipidemia is discovered, an alcohol history must be taken.

The mechanism for hypertriglyceridemia caused by alcohol is thought to be due to the overproduction of very low density lipoproteins. The oxidation of the fatty acids is slowed thus making a greater proportion of the fatty acids available for esterification to triglyceride. Alcohol ingestion alone has been shown to increase serum triglyceride levels in a number of individuals. However, with the consumption of food and alcohol the enhancement of the serum triglyceride level can be many fold.

There is also some evidence that the intestine itself may increase the production of very low density lipoproteins. In some individuals chylomicrons are also accumulated and thus the reason for finding a Type 5 in certain persons with alcohol ingestion.

Finally, there is a significant degree of individual variation with similar amounts of alcohol and food ingestion. This suggests that other factors may be important in the production of hypertriglyceridemia. For some, it may be that the peripheral removal of triglyceride is impaired.

SUMMARY

Alcohol is a commonly used drug which, for the most part, causes few ill effects in small quantities. However, significant carbohydrate metabolic problems can occur, the most serious being fasting hypoglycemia and ketoacidosis. As long as these two conditions are recognized, treatment can effectively eliminate a great number of potentially fatal cases. Other effects on glucose tolerance can result from liver damage and chronic pancreatitis.

Hyperlipidemia, in particular hypertriglyceridemia caused by elevations in very low density lipoproteins induced by alcohol, is fairly common. These cases should not be treated with drugs but should be treated with the withdrawal of alcohol. In a few susceptible people in whom very high levels of triglyceride are found, complete abstention from alcohol is essential.

Finally, it is important to obtain a good history of alcohol ingestion on any patients in which these conditions seem to exist.

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Seminars in
Gastroenterology
and Liver Disease

Endoscopic Retrograde Cholangiopancreatography

George E. Burdick, M.D.

Editors:
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Endoscopic retrograde cholangiopancreatography (ERCP) has revolutionized our approach to surgical disease of the pancreas and biliary tract. Along with a few other recently devised techniques, much of our preoperative guesswork as well as needless explorations have been eliminated.

INDICATIONS FOR ERCP

Indications for ERCP are as follows:

1. Obstructive jaundice
2. Suspected biliary tract disease in nonjaundiced patients (e.g., post cholecystectomy syndrome)
3. Recurrent pancreatitis
4. Suspected pancreatic neoplasm

The indications for ERCP will be discussed in more detail below. In addition other recently developed techniques and their use, particularly in evaluating jaundiced patients, will be presented. It should be noted, however, that the reliability of these techniques will vary considerably between hospitals based on available expertise.

OBSTRUCTIVE JAUNDICE

Prior to our ability to directly visualize the bile ducts the decision to operate on a jaundiced patient was based on the clinician's impression of the history, physical findings and laboratory data. Often a "test of time" was a crucial part of the clinical assessment. As a result, long (expensive) delays were not uncommon before appropriate surgical management. At the other extreme, many unnecessary operations were performed on patients with intrahepatic cholestasis.

Several new techniques have all but eliminated our difficulties in deciding whether a patient has medical or surgical jaundice. Some of the newer and more useful diagnostic studies are discussed below.

1. Abdominal Ultrasound

An extremely useful screening technique in those hospitals where the full potential of diagnostic ultrasound has been developed. Ultrasound has been particularly useful in patients with acute cholecystitis where oral cholecystography is not possible because of jaundice or cystic duct obstruction.

ADVANTAGE:

Inexpensive screen for pancreatic and gallbladder disease.

DISADVANTAGE:

Wide variability of expertise of people doing ultrasound producing marked differences in reliability from hospital to hospital.

Enough false-positives to require confirmatory study before surgery. (However, diagnosis of cholecystolithiasis is reliable if findings are unequivocal.)

2. Computerized Axial Tomography (Cat Scan)

Useful, but its application to abdominal disease has been disappointing in degree of reliability. May improve with advances in instrumentation.

ADVTANTAGE:

Not as difficult to interpret as ultrasound.

DISADVANTAGE:

Very expensive for a screening study. Findings require confirmation by either percutaneous transhepatic cholangiography or ERCP.

3. Percutaneous Transhepatic Cholangiography (Using CHIBA needle)

The use of the CHIBA skinny needle has markedly improved this technique which was formerly considered hazardous.

ADVANTAGE:

Direct visualization of bile ducts. High percentage of visualization if bile ducts obstructed, (> 90%).

Technically easy to perform. Although experience is helpful in performance of procedure, not as critical as with ERCP.

DISADVANTAGE:

If bile duct not visualized does not exclude obstruction.

Clotting abnormalities or ascites may contraindicate study.

From 1010 E. McDowell Road, Ste. 204, Phoenix, AZ 85006.

Less safe than ERCP with history of dye sensitivity.

Unable to visualize pancreatic duct or ampulla of Vater.

4. ERCP

An excellent study which usually provides the most information in jaundiced patients. However, the examiner needs the experience of many cases (more than 100 cases) before a reasonably good success rate of common duct cannulation can be obtained.

ADVANTAGE:

Provides more information than other techniques.

If malignancy present, the site of origin usually can be ascertained (i.e., ampulla vs. pancreas or bile duct).

Visualizes pancreatic duct if desired.

ERCP usually provides more specific information than PTC. ERCP is more likely to visualize the ducts in patients with intrahepatic cholestasis.

DISADVANTAGE:

Requires considerable experience and expertise not generally available.

If technical expertise is available, ERCP is usually the procedure of choice. PTC, on the other hand, is easily performed and individuals can be readily trained in its use. PTC should, therefore, be available even in small towns and hospitals.

SUSPECTED BILIARY TRACT DISEASE

The post cholecystectomy syndrome is the most common of the entities in this category. Particularly when the patient's symptoms are severe and strongly suggestive of "biliary colic," repeat exploration has often been undertaken.

ERCP has proven useful in this situation. A normal biliary tract and pancreatic duct is strong evidence against a surgically correctable cause of pain. On the other hand, retained stones, strictures, pancreatic lesions and excessively long cystic duct remnants are easily diagnosed and treated accordingly.

The exquisite detail given by the retrograde examination far exceeds the ability of the intravenous cholangiogram. Because of the poor detail and high incidence of side effects we have abandoned the routine use of the IVC.

An interesting special form of post cholecystectomy syndrome occurs in a few patients who, in addition to cholecystectomy, have undergone side to side choledochoduodenostomy. Trapped food particles entering through the side to side anastomosis become trapped in the intrapancreatic portion of the bile duct. This may lead to recurrent cholangitis, pancreatitis or both. Revision to a choledochojejunostomy readily relieves these episodes.

RECURRENT PANCREATITIS

Evaluation of patients with recurrent pancreatitis has been one of the major contributions of ERCP. Combined with ultrasonography, intelligent decisions can be made as to whether or not the patient needs an operation and the type of operation can be planned preoperatively. The most common cause of recurrent pancreatitis that is surgically correctable is biliary tract disease. An oral cholecystogram is frequently all that is necessary. It is those patients who do not have clear-cut biliary tract disease and who may or may not be alcoholic that the question of surgical intervention becomes less clear. A number of factors are used in the evaluation of patients for surgery and some of these are listed below:

1. The etiology of the pancreatitis
2. The presence or absence of alcoholism
3. Severity and frequency of attacks
4. Endocrine status (presence or absence of diabetes)
5. Exocrine status (steattorhea)
6. Previous upper abdominal surgery
7. Ductal pathology (ERCP)
8. Availability of surgical expertise

Some ductal lesions can be approached surgically with little danger of subsequent diabetes. Other patients who do not have isolated strictures or cysts, etc., would require total or subtotal pancreatectomy in order to prevent recurrent attacks. Obviously, whether the patient is already requiring insulin would be an important factor in determining whether subtotal pancreatectomy is reasonable.

A more detailed discussion of diagnostic evaluation of recurrent pancreatitis will appear in a subsequent article.

SUSPECTED CARCINOMA OF THE PANCREAS

ERCP is the most reliable method of making a preoperative diagnosis of carcinoma of the pancreas. Diagnosis can be expected to be made in over 90% of cases with carcinoma.

The most common false-positive diagnosis is in patients with chronic pancreatitis who may present with ductal obstruction. At times it can be impossible to differentiate chronic pancreatitis from carcinoma although the clinical history usually differentiates these two entities.

False-negatives may be seen in 5 to 10% of cases, usually when the tumor involves the accessory duct (Santorini). This duct is not necessarily seen in the normal pancreatogram. If both the main duct and the duct of Santorini are visualized false-negative diagnoses are extremely unusual in my experience.

Although ultrasound and CAT scanning may be used in screening for pancreatic carcinoma, a confirmatory study such as ERCP is recommended before submitting the patient to exploration. CHIBA needle biopsy of the pancreas, usually under ultrasonic control, has been advocated by some as a method of diagnosis of carcinoma of the pancreas. This method would be particularly useful in patients where surgery is not contemplated and a tissue diagnosis needs to be obtained. However, the diagnosis is missed in a high proportion of cases with skinny needle biopsy. This, of course, is to be expected since even biopsy at surgery may fail to make the diagnosis of carcinoma.

COMPLICATIONS OF ERCP

Complications of ERCP include the following:[1]

1. Acute pancreatitis (1%)
2. Cholangitis (0.8%)
3. Pancreatic abscess (0.3%)
4. Drug reactions (0.6%)
5. Instrumental injury (0.2%)

The incidence of these complications listed is based on a large survey of endoscopists who perform ERCP.

The incidence of pancreatitis is higher in those patients with abnormal pancreatic ducts. It may be as high as 5 to 10% in those patients with recurrent pancreatitis. However, most often the pancreatic inflammation is extremely mild and does not require therapy.

Cholangitis can also be expected to be considerably higher in patients with ductal obstruction. It would probably approach 10 to 15% of cases if early surgery were not undertaken. It is our policy to operate on any patient with common duct obstruction within 24 hours and our incidence of cholangitis has been extremely low.

Pancreatic abscess may occur if a patient with pancreatic pseudocyst is studied and not subsequently operated upon. This is an extremely dangerous complication and a number of deaths have been reported as a result of pancreatic abscess. Again, if early operation is performed this complication can be avoided.

The incidence of drug reactions and instrumental injury is the same as would be expected with any endoscopic procedure.

CONTRAINDICATIONS TO ERCP

1. Patient unwilling or unable to tolerate surgery
2. Acute pancreatitis
3. Dye sensitivity

Because early surgery may be mandatory on the basis of ERCP findings the procedure should not be performed on patients unwilling or unable to have surgery performed. Of those listed above, this is the only mandatory contraindication. Patients with acute pancreatitis may be studied if surgery is being contemplated as a form of therapy. Serious dye sensitivity reactions are extremely rare with ERCP but have occurred on at least three occasions. In a patient with a strong history of dye sensitivity the relative risk of the procedure versus the need for a diagnosis will have to be evaluated.

SUMMARY

ERCP, augmented by the other studies mentioned in this article, has drastically improved the preoperative evaluation of pancreatic and biliary tract disorders. If properly used, the techniques described can be expected to decrease the number of exploratory operations, increase the success rate of surgery and decrease the cost of medical care for these conditions through efficient diagnosis and treatment.

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Neurology

Steroid Myopathy

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Adrenal corticosteroids serve as valuable therapeutic agents in a variety of diseases. Unfortunately, the anti-inflammatory and gluconeogenic actions are coupled with protein catabolism which expresses tissue breakdown in the lymphatic, osseous, dermal, muscular and other tissues resulting in such catabolic effects as osteoporosis, thinning of the skin, vascular fragility and myopathy. Its deleterious effects on muscle metabolism seem to be antagonistic to the response of muscle to insulin causing a decrease in glucose utilization, a depression of DNA, RNA, and protein synthesis, mobilization of muscle protein, and muscular atrophy.

Muscular weakness and tiredness are typical manifestations of the syndrome first described by Cushing[1] in 1932. The clinical symptoms associated with Cushing's syndrome are usually due to an excess of endogenous cortisol or exogenous corticosteroids. Although weakness has long been recognized as part of the clinical picture of several endocrine disorders, only recently have the myopathies involved been extensively studied. A specific myopathy was first detailed in 1959, when Muller and Kugelberg[2] described six patients with Cushing's syndrome, five of whom developed proximal limb weakness during the course of the disease.

Perkoff et al.[3] reported cases of muscle weakness with muscular atrophy in patients being treated with corticosteroids. Numerous similar reports have since appeared with the widespread and often long-term administration of these agents. Although its exact prevalence is unknown, steroid myopathy is now probably the most common endocrine myopathy. The symptoms encountered include easy fatiguability, weakness first of the hip flexors and then of the shoulder girdle musculature.

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Routine laboratory tests are usually normal, although serum creatine phosphokinase (CPK) levels may be slightly elevated. It is readily reproducible in a wide variety of experimental animals and has been extensively studied in recent years in terms of morphology, physiology and biochemistry. Although several mechanisms of dysfunction have been proposed, the various effects of corticosteroid drugs on skeletal muscle are still in the process of being defined.

Reported human electromyographic findings in steroid myopathy are non-specific, consisting of short-duration, low-amplitude polyphasic potentials, and absence of fibrillation potentials, with normal nerve conduction and neuromuscular transmission.[4] An electrophysiological study by Gruener and Stern[5] on dexamethasone-treated and control mice demonstrated an inability to evoke an action potential in many of the fast-twitch extensor digitorum longus (EDL) muscle fibers from corti-costeroid treated animals at their measured resting potentials (RPs). However, when the resting potential was hyperpolarized by long-duration injection of inward direct current, an action potential could be generated. The RP of the treated slow-twitch soleus muscle was not significantly different from that of the control soleus. It appears that the reduced membrane excitability of the corticosteroid treated fast-twitch muscle could be due to the change in internal ion composition possibly produced by a decrease in intracellular potassium that has been previously shown to occur in chronic corticosteroid administration.[6]

Morphological changes seen at the light microscopic level in biopsied muscle involve a preferential atrophy of fast-twitch histochemical Type II fibers in Cushing's syndrome[7] and in steroid myopathy both in patients and in experimental animals.[8] When the Type II fibers are subtyped histochemically into Type IIA and IIB fibers,[9] the IIB muscle fibers are seen to be selectively involved. The slow-contracting Type I muscle fibers show little or no change. The intrafusal nuclear chain fibers of the muscle spindles in cortisone treated fast-twitch EDL rat muscle have also been found to be preferentially atrophied. The nuclear chain and the nuclear bag fibers of soleus muscle spindles showed little change.[10] Since catabolic effects of corticosteroids are relatively specific for white, fast-twitch muscle, it has been suggested that the hormone may spare red muscle, which are physiologically more active because there appears to be a relative decrease in the amount of atrophy in experimentally stimulated muscle.[11]

The most frequently observed ultrastructural changes in steroid myopathic muscle have involved mitochondrial abnormalities. The mitochondria have reported to vary in size,[12,13,14] aggregate,[7,13,14] contain amorphous material instead of well-defined cristae,[7,12] and to be surrounded by accumulations of glycogen[13,14] and lipid.[12,13,14] Later alterations which have been described include myofibrillar loss and disarray[12,14] with associated mitochondrial loss[14] and irregularity of the Z lines.[12,14] These abnormalities have been noted to be more extensive in red muscle,[13,14] which would appear somewhat conflicting with the known preferential involvement of the white, histochemical Type IIB fibers.[7,8] Furthermore, extensive structural changes of mitochondria suggest an alteration in energy metabolism, but no significant differences have been found in mitochondrial respiration comparing control and steroid-treated animals[15] and experiments with dexamethasone-treated hypophysectomized rats.[16] This suggests that the probable primary site in muscle responsible for steroid-induced weakness is not within the mitochondria. The significance of the reported morphological changes is difficult to assess. In fact, in a double-blind examination of ultrastructural alterations, Stern et al.[17] found virtually no difference between control and cortisone treated rats at 15, 19, 21, and 31 weeks after institution of treatment. It is indeed possible that the earliest detectable morphological changes are not within the muscle fiber itself but in the plasma membrane.[18]

Noticeable muscle weakness and atrophy resulting from corticosteroid administration usually occurs from 3-20 months after starting the drug.[19] The ideal treatment for steroid myopathy is to stop the drug which usually results in complete recovery from several months to a year after discontinuance. Since it is not always possible for patients to stop taking steroids, however, alternative methods of treatment have been sought.

Selection of the corticosteroid to be given is, in itself, important. Obviously, it would be most advantageous to administer a drug with as few unwanted side-effects as possible coupled with sufficient therapeutic potency. Triamcinolone and other synthetic steroids, especially those which contain a flourine atom in the 9-alpha position have been reported to be more likely to produce a myopathy. The likelihood of incurring a steroid myopathy is thought by some to be partially explained by the binding capabilities of these synthetic analogues. Thus, chemical groups dissimilar enough from the structure of cortisol may bind less efficiently to the receptor site, leaving the unbound portion to determine the physiological activity which results in Cushing's syndrome. However, in a recent investigation by Mayer et al.,[20] it appeared as if there were two high-affinity and specific receptor sites for corticosteroids. One being for the endogenous cortisol and progesterone, and the other for such synthetic steroids as triamcinolonacetanide, and dexamethasone. They reported an increase in muscle protease activity, suggesting that efficient binding has little to do with evading muscle catabolism.

The dosage of corticosteroids generally employed in practice are often quite artibrary. Daily doses of steroids often appear necessary initially to obtain desired anti-inflammatory action. Once this has occurred, alternate day therapy for long-term maintenance can usually be employed. A single dose equivalent to that used over a 48-hour period is thought to mimic the normal diurnal cycle of cortisol. Cortisol has a plasma half-life of 80-90 minutes. Some of the synthetic steroids with prolonged tissue half-lives (e.g. dexamethasone) may have a greater tendency to produce side-effects possibly resulting from constant stimulation of peripheral tissues. On the other hand, steroids such as prednisone, prednisolone, or methylprednisolone may produce less side-effects but allow for the desired anit-inflammatory activity to carry over on to the alternate day.

Administration of other drugs in conjunction with corticosteroids may be beneficial. Phenobarbital and diphenylhydantoin (Dilantin) appear to accelerate the metabolism of steroid drugs. Phenobarbital, when given with dexamethasone, has been reported to considerably shorten its half-life.[21] Dilantin has the ability to enhance tissue uptake of cortisol which was demonstrated by a decrease in cortisol half-life, an increase in its metabolic clearance rate, an increase in cortisol blood production rate and an increase in 24-hour cortisol secretion rate.[22] In addition, *in vitro* and *in vivo* electrophysiological studies in experimental animals have shown that Dilantin is capable of reversing the membrane effects in steroid myopathy and increasing muscle fiber excitability.[23] However, diphenylhydantoin did not reverse the loss of oxidative capacity which was found primarily within white muscle fibers following prolonged steroid administration in rats.[16]

In diseases such as polymyositis, myasthenia gravis, rheumatoid arthritis, and bronchial asthma, large doses of corticosteroids are administered therapeutically. The myopathy encountered by steroid treatment is a common consequence but weakness may be also due to an exacerbation of the primary underlying disease or to some independent process. In any case, muscle weakness can severely limit the individual's mobility, heightening the importance for regaining or at least improving muscular function. At present we have approached the problem of reversing steroid-induced myopathy by changing dosage regimens, altering the synthetic analogue of cortisol, administering other drugs in conjunction with corticosteroids and perhaps most importantly, by attempting to identify the mechanisms of muscle dysfunction. Although considerable knowledge has been attained in this area, we still lack the information necessary to exclude the unwanted side-effects of corticosteroid therapy.

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Obstetrics and Gynecology

Office Gynecology

Part I

John V. Kelly, M.D.

Donald J. Ziehm, M.D., Editor

Numerous problems are encountered daily in office gynecology, but only those which are of interest because of their frequency of occurrence and/or because of new treatment modalities will be discussed.

VENEREAL DISEASE

The traditional problems of gonorrhea, its diagnosis and treatment, remain relatively unchanged. Modified Thayer-Martin media, Trans-grow or the kit with plastic bag and CO_2 tablet are the media of choice for culture. In the office, storage life of MTM plates at room temperature is two weeks, six weeks if sealed in plastic and refrigerated; storage life of Trans-grow bottles when refrigerated is three months. Preferred treatment for gonorrhea continues to be aqueous Procaine Penicillin 4.8 million units, or 3.5 gm of Ampicillin p.o. and Probenecid 1 gram by mouth. For patients allergic to Penicillin, Tetracycline (Erythromycin for the pregnant patient) in doses of 1.5 gm p.o. followed by 0.5 gm q.i.d. for four days for a total of 9 grams may be used. Spectinomycin (Robicin) 2 gm I.M. is reserved for the still-rare penicillin-resistant gonococcus. It must be kept in mind that, of the antibiotics mentioned above, only Spectinomycin does *NOT* abort incubating lues.

Recently, two items of interest have surfaced. First, it has been persuasively demonstrated that acute salpingitis is usually the result of a *dual infection* by the gonococcus and an anaerobic bacteria. Secondly, a chlamydia — an organism midway between a bacterium and a virus, previously known to be responsible for trachoma and lymphogramuloma venereum — is now recognized as being the infectious agent not only in non-gonococcal urethritis in males, but also for cervicitis and even salpingitis in females. Although it is a fastidious organism and difficult to culture, it responds very well to a course of Tetracycline therapy.

If *acute salpingitis* is diagnosed, prompt treatment is essential to avoid severe peritonitis and adhesions which may render the patient infertile. Outpatient therapy with the dosages mentioned above for Penicillin and Probenicid should be followed by Ampicillin p.o. 500 mg q.i.d. for ten days. In the event of Penicillin allergy, Tetracycline 1.5 gm p.o. STAT and then 500 mg q.i.d. for ten days may be substituted.

Indications for hospitalization for *acute salpingitis* include abdominal rebound tenderness, fever over 101° F, presence of an adnexal mass, concomitant pregnancy, a patient unable to take oral medications, or an obviously sick patient. If present, an intra-uterine device must be removed. In-hospital treatment includes administration of Penicillin, 30 million units per day and Gentamycin 3 mg/kg/day in divided doses by intravenous bolus therapy. It is important to achieve blood levels of Gentamycin approaching 4 ug/ml so that adequate treatment is obtained. If the patient does not respond satisfactorily in 48 hours, or if septic shock appears, Clindamycin should be added, 600 mg I.V. q 6 hours for 5-7 days. A perilous side effect of Clindamycin is enterocolitis, indicated by the presence of watery stools. Obviously, the drug must be discontinued should this occur. In a patient not responding to Clindamycin, intravenous Chloramphenical is indicated. Interestingly, bone marrow depression has apparently never been reported with intravenous use of Chloramphenical. A patient with acute salpingitis with a pelvic mass should have antibiotic therapy for 12-24 hours prior to performing abscess drainage or pelvic clean-out.

VULVOVAGINITIS

The persistent and perplexing problems of vulvovaginitis continue to be a challenge. Flagyl seems to be the "cure" for trichomonas. However, the one day treatment course of 2 grams (eight 250 gm. tabs) has been found to be just as effective for both partners as the previous 7-10 day course. Alcohol ingestion must be avoided while taking Flagyl because the combination may produce an antabuse-like effect with marked nausea and vomiting. Flagyl is not permitted for pregnant patients in the first trimester because of possible teratogenic effects, and should be used with caution in later pregnancy. Older,

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and often ineffective remedies (Betadine, Vagisec, Furazolidine, Trichotine, etc.) may be prescribed during pregnancy.

Candida infections often respond to Miconazole (Monistat 7) but can be resistant to numerous medications. Nystatin given orally is sometimes surprisingly effective, perhaps by eliminating a rectal source of the fungus. The concomitant use of steroids to break the itch-scratch cycle, the precautions to test the patient for diabetes, and obtaining a history of the use of broad-spectrum antibiotics are still essential aspects of the work-up.

Vaginal infection due to hemophilis, detected by the presence of "clue cells" on smear, may respond to sulfa. However, at times the use of Ampicillin 500 mg q.i.d. for 5 days to both the patient and her consort may yield better results.

Vulvar herpes with its painful ulcers continues to be a *bete noir*. Diagnosis is usually obvious but can be corroborated by cultures obtained from the lesions and placed in Hank's solution. Betadine compresses and douches, cold water packs, alcohol or ether packs are all helpful to some degree. The use of dyes (acridine orange, neutral red) and light (incandescent or other) to the lesions has fallen under the scrutiny of oncologists who suggest that such therapy may be oncogenic. Still needed is a safe, effective agent to kill or neutralize the herpes viruses.

ENDOMETRIOSIS

The patient with severe endometriosis who presents with a fixed-retroverted uterus, dense adhesions, pain, and sterility, is a real challenge. When hysterectomy and/or pelvic clean-out is undesirable, the only available treatment previously was a 6-12 month course of oral contraceptives, Stilbestrol, Premarin or Provera to produce a "pseudo-pregnancy state" in the hope of abating or neutralizing the symptomatology. A new and very promising approach is the use of Danazol (Danocrine) to produce a "pseudo-menopause state." FSH and LH are suppressed. Its apparently superior results have convinced many gynecologic endocrinologists that it is the drug of choice in severe endometriosis, alone or in conjunction with surgery. The present recommended regimen is 400 mg BID (most recently 200 mg BID has been advocated) for 6-12 months. It is of particular help in patients who cannot, will not, or should not use oral contraceptives. Side effects include occasional mild atrophy of the vaginal mucosa, hot-flashes, and, rarely, mild virilization. Unfortunately, the cost is still relatively prohibitive ($4.00 per day for 800 mg). Results with Danazol therapy appear to be somewhat better than with the oral contraceptives — 40 percent pregnancy rate after 9-12 months of treatment, 95 percent relief of pain and an endometriosis recurrence rate of only 40 percent after three years.

(TO BE CONTINUED)

Oncology

Tumor Viruses and Human Cancer

II. DNA Tumor Viruses

Rosalie A. Fowler, M.T.
Frank L. Meyskens, Jr., M.D.

Editors:
David Alberts, M.D.
Robert H. Thoeny, M.D.

INTRODUCTION

DNA tumor viruses have been associated with animal malignancies in three distinct situations: (1) as a contagious, infectious agent transmitted between members of a species or between species (horizontal transmission), (2) as a congenital infection (acquired transplacentally), and (3) as an endogenous viral agent transmitted as part of the genetic make-up of the newborn (vertical transmission). In animals, Herpes viruses, adenoviruses, and polyoma viruses have all been implicated.[1] However, in humans only Herpes viruses have been strongly implicated as etiological agents. The subject of this review will be limited to the Herpes viruses and their possible role in Burkitt's lymphoma, nasopharyngeal carcinoma, and cervical cancer.

STRUCTURE AND LIFE CYCLE OF HERPES VIRUSES

The Herpes viruses are a large enveloped DNA virus 150-170 nm in diameter, with an icosahedral capsid about 100 nm in diameter (Figure 1). The Herpes virions have a complex and unique structure consisting of an outer lipoprotein envelope largely derived from host cell

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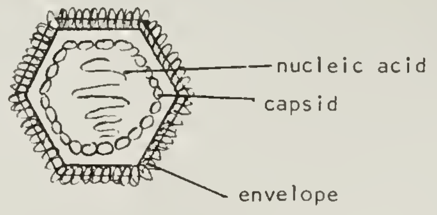

FIGURE 1
Generalized Structure of a Herpes Virus

nuclear membrane, and a less defined inner membrane which surrounds an icosahedral capsid with 162 capsomeres.

Essential steps in the multiplication of Herpes viruses can be placed into several sequential steps.[2] These are as follows: (1) attachment, (2) penetration, (3) uncoating, (4) eclipse (disappearance of infectious virions during which a complex series of biosynthetic events occur), (5) transcription of messenger RNA (mRNA) from specific sequenced of viral DNA, (6) translation of the mRNA from progeny as well as parental DNA, (7) translation of late mRNA's into structural and other virus proteins, and (8) assembly and release of new virions. Some of the Herpes viruses are integrated into the cellular genome and are oncogenic. Many of the Herpes viruses cause persistent infections characterized by long periods of latency. Today, using virus-infected tissue, it has become possible to study at least some of the events that lead to tumor formation *in vitro*. The central phenomenon of the system is cell transformation. When the cultured cells are infected with an oncogenic virus, a proportion of them assume a new set of stable properties that closely resemble the properties of cells derived from "spontaneous" or virus-induced tumors.

PRESENCE IN ANIMAL MALIGNANCIES

Herpes viruses have been found to be the etiologic agent of at least three animal malignancies.[3,4] The first indication that a Herpes virus might be oncogenic was noted in frogs in 1956. The presence of "virus particles" morphologically similar to *Herpes simplex* virus in the nuclear inclusion bearing cells of the renal adenocarcinoma of *Rana pipiens* (Lucke tumor) was noted. Marek's disease, a highly infectious chicken lymphomatosis, is caused by a Herpes virus.[5] Although lymphoproliferation is the main manifestation of infection in Marek's disease, there can also be hematopoietic destruction resulting in a severe aplastic anemia. Genetic selection for resistance to Marek's disease is usually based on the absence of formation of lymphoproliferative lesions, but little is known of the physiological mechanism through which the genetic resistance is mediated. In monkeys *Herpes saimiri* invariably causes a lethal lymphatic leukemia or lymphoma.[6]

TABLE I DNA Viruses and Cancer

Virus	Host	Type of Cancer
Lucke Herpes virus	frog	Lucke tumor (adenocarcinoma)
Marek's disease Herpes virus	chicken	Marek's disease
Herpes Saimiri	primates	lymphatic leukemia or lymphoma
Epstein-Barr virus	human	Burkitt's lymphoma
Epstein-Barr virus	human	nasopharyngeal carcinoma
Herpes simplex type 2 virus	human	cervical cancer

THE ASSOCIATION OF HERPES VIRUSES AND HUMAN MALIGNANCY (See Table 1)

Burkitt's Lymphoma

This cancer accounts for about one-half of all cancer in East African children. In 1964, Epstein, Achong and Barr found a herpes-like virus particle in cultured Burkitt lymphoma cells.[3,4] Since their discovery, the Epstein-Barr Virus (EBV) has been isolated regularly from almost all cultures of lymphocytes obtained from African Burkitt's lymphoma patients. To date, however, there has been *no* convincing demonstration of EBV particles in *fresh* biopsy material of African Burkitt's lymphoma. Also, EBV has not been detected in cultured American Burkitt's lymphoma.

Evidence supporting the association of EBV and Burkitt's lymphoma comes from a variety of sources including (1) antigenic studies, (2) nucleic acid hybridization studies, (3) tumor induction in subhuman primates, and (4) the ability of the Epstein-Barr virus to infect and transform primary leukocytes into continuous cell lines which contain EBV-specific markers.

Several EBV-associated antigens have been found in African Burkitt's lymphoma tumor-derived cell lines. Some of these antigens can be detected by immunofluorescence and include viral capsid antigens, cell membrane antigens, and "early" antigens. Studies of the EBV antigens during the course of Burkitt's lymphoma suggest that patients who lose antibodies to "early" antigens during chemotherapy are the long-term survivors.

Nucleic acid hybridization studies are performed to assay the presence of the EBV genome in Burkitt's lymphoma. These studies reveal that EBV DNA can be found with good consistency in the malignant tissues of Burkitt's lymphoma and also in lymphoblastoid cell lines derived from Burkitt's lymphoma tumors.

The ability to induce tumor formation in subhuman primates using EBV-transformed lymphoblastoid cells and cell-free virus preparations has been used to link EBV to human malignancy. It was found that when an EBV-transformed cell line from marmosets was inoculated into normal and immunosuppressed cotton-topped marmosets,

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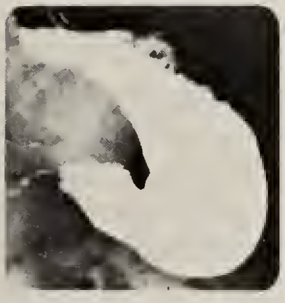
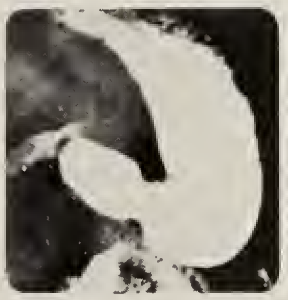
In this double-blind study, twenty patients having G.I. series and exhibiting spasm were randomly selected to receive either 2 cc. of Bentyl or sodium chloride intramuscularly. Ten minutes after the injection another radiograph was taken . . .

. . . Bentyl produced definite relaxation in 8 of 10 patients. The sodium chloride produced relaxation in only 3 of 10. No side effects occurred in either group of patients.



Pylorospasm has almost totally blocked passage of barium meal.



Barium meal beginning to pass 10 minutes after intramuscular injection of 20 mg. Bentyl.

"The correlation of spasm relief and drug given was excellent."

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*This drug has been classified "probably" effective in treating certain functional G.I. disorders.

†See Warnings, Precautions and Adverse Reactions.

See following page for prescribing information.

Reference:
King, J.C. and Starkman, N M.: Evaluation of an antispasmodic. Double-blind evaluation to control gastrointestinal spasms occurring during radiographic examination. A preliminary report. Western Med. 5:356-358, 1964

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IT SHOULD BE NOTED AT THIS POINT IN TIME THAT THERE IS A LACK OF CONCURRENCE AS TO THE VALUE OF ANTICHOLINERGICS/ANTISPASMODICS IN THE TREATMENT OF GASTRIC ULCER. IT HAS NOT BEEN SHOWN CONCLUSIVELY WHETHER ANTICHOLINERGIC/ANTISPASMODIC DRUGS AID IN THE HEALING OF A PEPTIC ULCER, DECREASE THE RATE OF RECURRENCES, OR PREVENT COMPLICATION

Based on a review of this drug by the National Academy of Sciences—National Research Council and/or other information, FDA has classified the following indications as "probably" effective:

May also be useful in the irritable bowel syndrome (irritable colon, spastic colon, mucous colitis, acute enterocolitis, and functional gastrointestinal disorders); and in neurogenic bowel disturbances (including the splenic flexure syndrome and neurogenic colon).

THESE FUNCTIONAL DISORDERS ARE OFTEN RELIEVED BY VARYING COMBINATIONS OF SEDATIVE, REASSURANCE, PHYSICIAN INTEREST, AMELIORATION OF ENVIRONMENTAL FACTORS.

For use in the treatment of infant colic (syrup).

Final classification of the less-than-effective indications requires further investigation.

CONTRAINDICATIONS Obstructive uropathy (for example, bladder neck obstruction due to prostatic hypertrophy); obstructive disease of the gastrointestinal tract (as in achalasia, pyloroduodenal stenosis); paralytic ileus, intestinal atony of the elderly or debilitated patient, unstable cardiovascular status in acute hemorrhage; severe ulcerative colitis; toxic megacolon complicating ulcerative colitis; myasthenia gravis. WARNINGS: In the presence of a high environmental temperature, heat prostration can occur with drug use (fever and heat stroke due to decreased sweating). Diarrhea may be an early symptom of incomplete intestinal obstruction, especially in patients with ileostomy or colostomy. In this instance treatment with this drug would be inappropriate and possibly harmful. Bentyl may produce drowsiness or blurred vision. In this event, the patient should be warned not to engage in activities requiring mental alertness such as operating a motor vehicle or other machinery or perform hazardous work while taking this drug. PRECAUTIONS: Although studies have failed to demonstrate adverse effects of dicyclomine hydrochloride in glaucoma or in patients with prostatic hypertrophy, it should be prescribed with caution in patients known to have or suspected of having glaucoma or prostatic hypertrophy. Use with caution in patients with: autonomic neuropathy; hepatic or renal disease; ulcerative colitis—Large doses may suppress intestinal motility to the point of producing a paralytic ileus and the use of this drug may precipitate or aggravate the serious complication of toxic megacolon; hyperthyroidism, coronary heart disease, congestive heart failure, cardiac arrhythmias, and hypertension; hiatal hernia associated with reflux esophagitis since anticholinergic drugs may aggravate this condition.
It should be noted that the use of anticholinergic/antispasmodic drugs in the treatment of gastric ulcer may produce a delay in gastric emptying time and may complicate such therapy (antral stasis). Do not rely on the use of the drug in the presence of complication of biliary tract disease. Investigate any tachycardia before giving anticholinergic (atropine-like) drugs since they may increase the heart rate. With overdosage, a curare-like action may occur. ADVERSE REACTIONS: Anticholinergics/antispasmodics produce certain effects which may be physiologic or toxic depending upon the individual patient's response. The physician must delineate these. Adverse reactions may include xerostomia; urinary hesitancy and retention; blurred vision and tachycardia; palpitations; mydriasis; cycloplegia, increased ocular tension; loss of taste; headache; nervousness; drowsiness; weakness; dizziness, insomnia; nausea; vomiting; impotence; suppression of lactation, constipation; bloated feeling; severe allergic reaction or drug idiosyncrasies including anaphylaxis; urticaria and other dermal manifestations; some degree of mental confusion and/or excitement, especially in elderly persons; and decreased sweating. With the injectable form there may be a temporary sensation of lightheadedness and occasionally local irritation. DOSAGE AND ADMINISTRATION: Dosage must be adjusted to individual patient's needs.
Usual Dosage: Bentyl 10 mg. capsule and syrup *Adults:* 1 or 2 capsules or teaspoonfuls syrup three or four times daily. *Children:* 1 capsule or teaspoonful syrup three or four times daily. *Infants:* ½ teaspoonful syrup three or four times daily. (May be diluted with equal volume of water.) Bentyl 20 mg. *Adults:* 1 tablet three or four times daily. Bentyl Injection *Adults:* 2 ml. (20 mg.) every four to six hours intramuscularly only. NOT FOR INTRAVENOUS USE. MANAGEMENT OF OVERDOSE: The signs and symptoms of overdose are headache, nausea, vomiting, blurred vision, dilated pupils, hot, dry skin, dizziness, dryness of the mouth, difficulty in swallowing, CNS stimulation. Treatment should consist of gastric lavage, emetics, and activated charcoal. Barbiturates may be used either orally or intramuscularly for sedation but they should not be used if Bentyl with Phenobarbital has been ingested. If indicated, parenteral cholinergic agents such as Urecholine® (bethanecol chloride USP) should be used.
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Cincinnati, Ohio 45215 U.S.A.

both groups developed a malignant lymphoma.

The last piece of evidence linking EBV to Burkitt's lymphoma comes from studies on fetal cord blood. Fetal leukocytes taken from umbilical cord blood cannot be established in culture unless they are first transformed by EBV. Today, all existing human lymphocytic lines with B-cell characteristics harbor the EBV viral DNA.

Despite all these studies there still remains the question of whether EBV actually causes Burkitt's lymphoma. Most investigators today believe that there may be additional factors involved in the expression of the suspected oncogenic potential of EBV. These factors include the specific genetic susceptibility or HLA type, a genetically determined immunological defect, host-related factors including age and sex, and an external precipitating factor such as severe infection with malaria.

Nasopharyngeal Carcinoma

A serological association has recently been found between EBV and nasopharyngeal cancer in the Chinese population of Southeast Asia, especially those originating in Kwantang province. The EBV DNA has regularly been demonstrated in biopsies of nasopharyngeal carcinoma.[7] Whether or not the EBV is the causative agent for nasopharyngeal carcinoma is not proven. EBV may be simply a passenger or secondarily expressed virus, and more work is needed in this area.

Cervical Cancer

The presence of antibodies to Herpes simplex type 2 (HSV-2) and cervical cancer in women has been studied by a number of different groups.[8;9] It seems that not only is there a strong association between the presence of antibodies and cervical carcinoma, but that cervical smears from women with cervical carcinomas contain cells with HSV-2 specific antigens. Epidemiological studies indicate that both HSV-2 and cervical cancer are high in sexually active women. A disturbing feature about the HSV-2 infection is its ability to establish a latent infection. In this kind of infection there is an acute primary phase followed by the apparent disappearance of the virus. Months or years later acute disease recurs and infectious virus is readily demonstrable.

Like the Epstein-Barr virus and Burkitt's lymphoma, an association exists between HSV-2 and human malignancy. HSV-2, like EBV, can *in vitro* induce cellular transformation of human cells. There is a definite link between HSV-2 and carcinoma of the cervix but whether both are consequences of a common third factor, sexual activity, or are causally interrelated has not been determined as yet.

SUMMARY

In man, the oncogenicity of DNA tumor viruses, especially Herpes viruses, is a distinct possibility, but it appears that in all cases other cofactors are involved. With all of the Herpes viruses there exists the "passenger" theory which proposes that infection by the virus occurs *after* tumor induction. However, it seems that Herpes viruses are too often found in association with both human and animal malignancies for the passenger theory to be readily accepted. From current studies on Herpes viruses, it appears that they have properties that qualify them for the position of human cancer viruses.

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Psychiatric Disorders

The Single Parent:

The Effect on the Children

Muriel Sieh, M.S.W.

Divorce, separation, death, hospitalization, desertion, imprisonment and armed services create one parent families.

However, divorce is probably the most common and difficult for a child to take. It is quite common for the child to be "caught in the middle," between parents who are less than cordial. This can result in behavioral problems.

Some children become demanding, selfish, and spoiled; when they are overindulged, they end up wanting more. Nothing seems to satisfy them. They sulk, are unappreciative and unhappy. They need realistic limits set and would be better off if the parent could feel comfortable in turning down unreasonable demands. Other children also want more than their share but for a different reason.

Children tend to idealize the missing parent remembering the fun times and blocking out the unpleasant memories. It is almost as if they would feel disloyal without the person around to defend himself. The anger felt toward the missing person for not having made more of an effort to make the marriage work, plus old anger regarding real or fancied injustices meted out by the missing parent are often kept in by the child and may produce depression, or all the anger may land upon the remaining parent. However, the child on a conscious level has the feeling "you, the remaining parent have deprived me of my other parent and I want both no matter how you two got along."

Children, living with only one parent, often feel left out of the conversation when other children mention what they have done or are planning to do on weekends. Sometimes they make up stories. Such children often feel more different than they have to because they never faced their feelings nor attempted to work them through.

Some children react to the absent divorced parent as they would to the death of a parent. In either case, it is unhealthy for children to hide their feelings. Occasionally children will say little for fear of hurting the remaining parent. Sometimes, the remaining parent repeatedly brings up the faults of the divorced spouse thus in essence saying, "See how good I am — love me better." Such children are really torn inside for they don't want to take sides; they cannot manage divided loyalties without personality damage.

It is very important for people to become emotionally

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as well as physically divorced. Divorce brings in its wake bitterness and often hatred. However, the child has a right to retain affection for both parents; he should not have to take sides. If bitterness can be kept to a minimum or eliminated and if the spouses can emotionally as well as legally divorce themselves from one another, all will benefit. The parent who can make a new life rich in meaningful activities and friendships can provide a more stable home.

Oftentimes parents have tried to cover up arguments and keep differences to a minimum in front of the children. When a divorce occurs, children are surprised and confused. Children of such divorces are usually more bitter toward the parent with whom they remain for they are reluctant to believe the reasons for the divorce, since they have not witnessed any major disagreements. Being *overly* controlled "for the sake of the children" is not realistic in the long run. Keeping up a facade of a happy home is a deception. It teaches the children to keep their feelings in, play act, and "keep peace at all costs." This is not to suggest that the opposite extreme is correct. When you see a child in helpless anguish over a parent's sorrow, you get the feeling that the child is parenting the parent. Such a reversal of roles is indeed inappropriate.

When a parent is deceased, many children have the sense of being abandoned and can feel as does the child whose parent has left the family. In either case, especially with young children, the child may feel anger toward the parent and himself. If the remaining parent cannot successfully work through a grief reaction the children will reflect this and have similar problems.

When a child has lost a parent, he needs reassurance about his remaining parent's plans. "If she remarries will she send me away? If she dies what will become of me?" Family plans should be made and shared with the child.

It should be recognized that it is not uncommon for a mother raising her children alone to turn to her oldest child for help in running the household, making decisions, and helping her discipline the children. Recognizing her feelings of helplessness, the child gives up some of his childhood to meet her needs. As he is given and accepts more and more responsibility he may begin to take over too much since he doesn't know where to draw the line and hasn't been told. He may order the children around, hit them and be demanding of his mother. Although he may not show it, he may be very resentful towards his mother for the extra degree of responsibility. Mother and relatives should not refer to the son as "the man of the house," when in reality he should behave like a boy.

Thus, children and the remaining parent in one parent families need to adjust to a new life. If the parent does not make an adequate adjustment, it is unlikely that the children will. Mature parents can allow the child to idealize and talk about the parent absent from the family and such parents can also cope with their child's anger toward them regarding separation or divorce. As usual, communication is the key. Unfortunately, the right key is sometimes hard to find and outside help is needed.

U of A
Grand Rounds

Hospital Management of Asthma

Sammy C. Campbell, M.D.
Russell Dodge, M.D.

Asthma is a very common medical condition requiring emergency treatment and occasionally admission to the hospital. Asthma is one type of obstructive airways disease but is differentiated from the other types by a history of symptom-free intervals between attacks. The dyspnea of asthma is always due to lower airway obstruction. Pathologically three abnormalities are usually seen. These are bronchospasm, mucosal edema and mucus production.

Whenever a patient presents to a hospital emergency room complaining of wheezing dyspnea, several diagnoses other than asthma should be entertained. This long differential diagnosis is listed in Table 1 with the more common problems listed separately from the rare ones. Cardiac pulmonary edema can usually be differentiated from asthma. The physical exam reveals other signs of heart failure. The chest films usually show cardiomegaly, vascular redistribution and interstitial fluid. Pulmonary embolism can usually be differentiated because the patient

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TABLE 1
DIFFERENTIAL DIAGNOSIS OF ASTHMA

Common

A. Cardiac Pulmonary Edema
B. Pulmonary Embolism
C. Acute Bronchitis or Bronchiolitis
D. Aspiration
E. Pulmonary Emphysema
F. Chronic Bronchitis

Rare

A. Carcinoid Syndrome
B. Allergic Alveolitis
C. Anaphylaxis
D. Laryngeal Spasm
E. Foreign Body
F. Substernal Goiter
G. Tumor Involving the Major Airway

may have pleuritic chest pain, hypotension, and only localized wheezes. Acute bronchitis or bronchiolitis is often very difficult to differentiate from asthma but is usually treated with the same general measures. Most persons with acute bronchitis or bronchiolitis do not have a previous history of asthma and may also have concurrent febrile illness. Aspiration into the airways can usually be diagnosed by a history of unconsciousness or some other predisposing condition.

Pulmonary emphysema and chronic bronchitis may occasionally be difficult to distinguish from asthma. Some patients have asthma in conjunction with pulmonary emphysema and chronic bronchitis, and the distinction is not necessary. As with acute bronchitis, patients should be assumed to have an element of bronchospasm and treated appropriately.

The pathophysiology of an acute asthmatic episode involves several mechanisms. There is a decreased caliber of the airways due to the smooth muscle contraction, mucosal edema, and mucus secretion and plugging. This causes an increased work of breathing. In order to compensate for the decreased size of the airways and to lessen the increased work of breathing the person with asthma will develop an increased lung size. This increased lung size results in an increase in airway size which lessens the work of breathing. An increased inspiratory muscle effort is necessary in order to maintain the high lung volume, but the total effort is less than that required in breathing at a low lung volume against increased resistance.

Because of the increased inspiratory muscle force and increased negative pressures that the lungs are subjected to, there is an increase in the pulmonary and systemic arterial pressures relative to pleural pressure, especially during inspiration. This causes an increased right ventricular volume which leads at least in part to the pulsus paradoxus that is seen in these patients. The degree of the pulsus paradoxus can be correlated with the amount of negative inspiratory pressure that has to be applied to the lungs to maintain the increased lung volume.[1]

In addition to the above mechanical disturbances, the asthma episode causes an uneven distribution of ventilation and perfusion, resulting in hypoxemia without any true right to left shunt.[2] Therefore, the hypoxemia is often easily treated with very low levels of oxygen if necessary. The hypoxemia will usually result in an increase in the minute ventilation and the patient will usually have a decreased carbon dioxide tension. In very severe cases where the airway obstruction is extremely high, the carbon dioxide tension will be normal or elevated.

Because of the above pathophysiologic mechanisms, several physiologic changes are seen during an asthmatic episode. There is an increase in airways resistance with a decreased forced vital capacity and FEV$_1$, but the FEV$_1$ to forced vital capacity ratio is relatively spared. There is an increase in the residual volume and to a lesser extent an increase in the total lung capacity. There is a decrease in the PO$_2$ and PCO$_2$. Pulsus paradoxus of over 10 mm Hg pressure is usually found and correlates with the degree of reduction in the FEV$_1$.[3]

The initial evaluation of a person with an acute episode of asthma should involve enough history, physical, and laboratory evaluation to evaluate for the other causes of asthma-like symptoms that are found in Table 1. Patients with an acute episode of asthma are usually found to be sweating and coughing, and to have wheezing that can be heard without aid of the stethoscope. On close physical examination they are usually found to have a tachycardia, pulsus paradoxus, and inspiratory retractions in the sternocleidomastoid area.[4] A laboratory examination will often reveal an elevated peripheral eosinophil count and

TABLE 2
ADMISSION FOR PATIENT WITH "MODERATE" ASTHMA

A. Rising PaCO$_2$ with no apparent change of worsening of ventilation.
B. Cardiac arrhythmias.
C. Return to hospital after recent emergency room treatment.
D. Peripheral Eosinophile count over 600/ cu mm.
E. PaO$_2$ persistent under 45 mm Hg.
F. Failure of symptoms to respond to initial therapy.
G. Failure of FEV$_1$ to improve with initial therapy.

the total white blood count is often mildly elevated. The sputum often appears purulent without evidence of infection and often contains predominantly eosinophils. The chest film will show radiolucency of the lung fields especially if compared to previous x-rays on the subject. The blood gas analysis shows a decreased PO_2 and PCO_2 while the pH is not changed in a consistant fashion.

With institution of proper therapy the patient with mild asthma is usually able to be treated as an outpatient. Conversely, the patient with obvious severe asthma is usually admitted. Any person with extreme restlessness, confusion, coma, muscle twitching or hypotension usually is admitted to an intensive care area. In addition, attention should be paid to rule out the presence of pneumothorax, pneumomediastinum, or pneumopericardium. However, frequently a patient does not have severe life threatening asthma but has more than a mild episode. It can be difficult to decide whether or not these persons should be admitted to the hospital. One major area of confusion lies in the blood gas determinations. Often patients will have only minor depression of their PCO_2 and PO_2 and be thought to not need hospital admission. However, because of the type of ventilation-perfusion abnormalities persons with asthma get, the airway obstruction has to be very severe to cause any marked deterioration of the blood gas picture. If the patient has to work very hard in order to maintain the blood gases at an appropriate level, this should be a clue that the patient is actually having a moderate to severe episode of asthma. Table 2 contains a list of criteria that can be used for the admission to the hospital of the patient with moderate asthma. These are, at best, only rough guidelines but should help in your assessment of these patients. Prolonged treatment in an emergency setting is to be avoided and whenever a patient does not respond to the initial therapy they are usually much better treated over several days in the hospital than in the outpatient setting.

The initial therapy for the patient experiencing an asthma attack should be safe, effective, and simple. Subcutaneous epinephrine meets these requirements in most circumstances. The drug is one of the sympathomimetic amines and produces vasoconstriction, cardiac stimulation, and bronchodilation secondary to its alpha, $beta_1$, and $beta_2$ receptor activities respectively. The increases in blood pressure and heart rate that can occur with the administration of epinephrine are rarely of clinical importance. Sly found an average increase of less than 5 percent in these two parameters when the drug was administered to a group of 20 asthmatic children.[5] Bronchodilatation was the predominant effect, with peak expiratory flows improving an average of 45 percent.

Because of the possibility of adverse reactions to epinephrine, the drug is not recommended for patients with hypertension, ischemic heart disease, or arrthymias. With the development of agents with more selective $beta_2$ adrenergic action such as terbutaline and metaproterenol, and because of the increasing use of aerosol delivery, epinephrine is less popular than it was just a few years ago.

Terbutaline is commonly used subcutaneously. Its actions, when administered by this route, are very similar to epinephrine, including the undesirable side effects of tachycardia and tremor.[6] The drug can be given also by aerosol. While this method of delivery is not yet approved by the FDA, it has been used in hospitalized patients. Evidence is accumulating that terbutaline has equal bronchodilator potency, a longer duration of action, and less systemic side effects than epinephrine when delivered by aerosol.[7,9]

Aerosol medications occasionally worsen bronchospasm in persons with acute asthma; consequently they must be used with caution. Isoproterenol has been the prototype agent of those which can be given by aerosol. It is a $beta_1$ and $beta_2$ drug with bronchodilator effects similar to epinephrine. Its chronotropic effects result in a 10 percent increase in heart rate in most patients.[9] Another difficulty is the variable activity of the drug. Severely obstructed patients respond less than those who can inhale more of the drug.[10] If isoproterenol were not inactivated by the alimentary tract, perhaps the response would be more uniform.

Patients who obtain relief of symptoms and clearing of muscle retractions and wheezing with sympathomimetic therapy should not be considered free of disease. McFadden and his co-workers have documented the poor relationship between the degree of bronchial obstruction and the clinical condition.[4] Lung function may be approximately 50 percent predicted when the patient reports total relief. Objective measurement of lung function, through the use of a portable spirometer, should be made on all patients after initial therapy. Those who have improved, but have residual obstruction, should receive ambulatory therapy. Those who fail to respond to initial therapy should receive intravenous aminophylline.

Aminophylline may also be used as initial therapy in conjunction with a sympathomimetic agent in patients who present with signs and symptoms that suggest hospitalization will be necessary. A recent report suggests additive effects when these drugs are used in combination.[11] It should also be noted that aminophylline can be used as the sole initial therapy for patients with contraindications to the adrenergic agents.

Like the sympathomimetics, aminophylline increases cyclic-AMP, and this effect is thought to account for its therapeutic activity. With the recent development of methods to measure the concentration of aminophylline in the serum, important observations about the drug have been made. The half-life in humans ranges from 3½ hours in children to over 24 hours in some adults with heart failure or liver disease. In addition, it has been documented that life-threatening central nervous system reactions to toxic levels of aminophylline can occur without being preceeded by minor gastrointestinal symptoms.[12]

These observations make it clear that the amount of drug administered should be guided by the serum theophylline level. Patients who have not been receiveing oral theophylline therapy should receive a loading dose of aminophylline. Each mg/Kg of a loading dose will increase the serum concentration by roughly 2 μg/dl. The maintenance dose, 1 mg/Kg/hour in normal adults, is then adjusted to keep the serum level between 10 and 20 μ g/dl. It is important to remember that a steady state of theophylline metabolism may not be reached in some adults until 5 days after the onset of therapy. Serum levels should be obtained, at 1 to 2 hours, 24 to 36 hours, and 3 to 5 days.

Corticosteroids should also be administered to patients who present with signs or symptoms signalling a serious attack of asthma. These compounds also affect the level of cyclic-AMP in bronchial mucosal cells.[13] Response to this group of compounds is delayed 8-12 hours, making early administration important. No single steroid compound has been found to be more effective than the others. Cost differences make oral prednisone the drug of choice; however, authorities prefer intravenous preparations such as hydrocortisone or mthylprednisolone to insure a minimal delay in response to the drug. No good evidence exists that the administration of more than 400-600 mg of hydrocortisone daily is of additional benefit to the patient.

Severely ill patients or those who fail to improve need certain laboratory tests to help guide their management. An arterial blood gas determination should be obtained. Patients with hypoxemia should receive low concentration supplemental oxygen. Patients with normal or elevated PCO_2 must be observed very closely with repeat blood gases. A progressive raise in the PCO_2 is an indication for mechanical ventilation.

A chest roentgenogram should be obtained to rule out another treatable illness such as pneumothorax or pneumonia. A sputum exam showing pus cells suggests the possibility of a bacterial infection and a broad spectrum antibiotic should be given. A complete blood count with an absolute eosinophil count may be obtained at the onset of therapy. Horn and his associates have presented evidence that steroid therapy should be sufficient to lower the total eosinophil count below 85 per cubic millimeter.[14]

As emphasized earlier in the discussion, early spirometric testing should be done on all patients. Those who are subsequently admitted to the hospital should then have at least daily spirometry. We have found this test to be most helpful in determining when the patient is ready for discharge.

Nearly all articles concerning the management of asthma emphasize the need for adequate hydration. While fluid replacement is an important part of therapy, Stalcup and Mellins have measured large negative intra-thoracic pressures in patients who have acute obstruction.[15] Hydrostatic forces favoring fluid accumulation in the lungs are increased by these pressures, and hydration should not be so enthusiastic that interstitial pulmonary edema hampers recovery from the asthma attack.

Patients who do not respond to the above therapy should be considered for mechanical ventilation.[16] A rising PCO_2 and obtundation are clues that the patient needs assistance. Intravenous isoproterenol has been reported to reverse the course of some patients, especially children, who have reached this point.[17] We have used intravenous isoproterenol in adults, but only with cardiac monitoring in the intensive care unit. Bronchial lavage with a bronchoscope has resulted in some isolated successes, but we recommend it only after the patient is on a ventilator. Sodium bicarbonate may improve the response to adrenergic agents if the patient is acidemic.

In conclusion, the assessment and treatment of patients presenting with bronchospasm encompasses a wide range of illness severity. An organized approach to the patient accompanied by objective measurements of the patient's course is essential to the successful management of these patients.

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Controversies In Medicine

T & A?

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The removal of tonsils and adenoids has been a controversial issue for fifty years.[1] In the past, T & A was advocated as a cure for all upper respiratory infections. In recent years, the pendulum has swung so far in the opposite direction that some feel there is *no* indication for this surgery. T & A has been blamed for increasing the incidence of asthma and Hodgkins Disease, and for decreasing immunity against respiratory illness. It has been credited with decreasing the incidence of infectious mononucleosis.[2] An attempt was made to settle the issue at a recent symposium including the disciplines of otolaryngology, pediatrics, infectious disease, immunology, orthodontia, speech pathology, and public health. It concluded only that there is need for further study.[3]

A most recent publication from the same group, which is continuing its study of the problem, deserves careful scrutiny.[4] The study followed a group of 65 children with a history of frequent sore throats, at least seven in one year or five in each of two previous years. These children were followed for one year resulting in only eleven (17%) with a subsequent pattern conforming to their prior history and thereby becoming eligible for tonsillectomy. The conclusion was that "undocumented histories of recurrent throat infection . . . do not constitute an adequate basis for subjecting children to tonsillectomy." If one reads the entire article, however, in addition to the eleven who met the criteria for surgery, there were eleven more with only three or four episodes documented during the study year. There were an unspecified number with two episodes, severity not mentioned. Of the original 65 children, 22 stuck it out for a second year and three more became eligible for surgery. Someone else might interpret the data, therefore, as showing an indication for surgery much higher than the 17% calculated in the article. A subsequent editorial in the same journal utilizes these data to caution against recommending a tonsillectomy for a history of frequent sore throats.[5]

Most would agree that an undocumented history of frequent sore throats is insufficient reason to recommend surgery. On the other hand, it is certainly not to be disregarded. Tonsillitis is not a difficult disease to diagnose. The tonsils are red, swollen and often covered

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Indications for Adenotonsillectomy

The Lancet

Adenotonsillectomy is one of the commonest operations done in the United Kingdom, and one of the most controversial. The main method of deciding whether the operation is necessary is to take a history from the mother. For tonsillectomy the usual indication is a story of four or more episodes of sore throat and pyrexia each year which are thought typical of tonsillitis. But as Paradise and others[1] point out, this practice depends on two untested assumptions — that such a history will accurately predict the frequency and severity of throat infections in the future, and that when the history of throat infection seems excessive the efficacy of tonsillectomy outweighs the cost and risks. They saw 65 children who had a history *from the mother* which seemed impressive — seven episodes of sore throat a year, or five in each of two consecutive years. These children were then followed up at close intervals. Only 17% had further attacks of throat infection typical of tonsillitis. Clearly a history from the mother is unreliable evidence that the child will have attacks of true tonsillitis in the future.

Hibbert and his colleagues have shown that much the same applies in assessment of indications for and results of adenoidectomy. They first did a survey of a random sample of consultant E.N.T. surgeons. 65% of the sample believed that the adenoid is removed because it is hypertrophied; 80% felt that the history from the parents was important in assessment of a patient for adenoidectomy; and 65% thought that clinical evidence of mouth breathing was important.[2] A series of children was then operated on, and after interview of the mother and examination of the child the adenoids were removed and weighed. No correlation was found between the prevalence of the symptoms and signs generally attributed to adenoidal hypertrophy and the size of the adenoids — with the exception of snoring in older children.[3] The adenoids were studied by radiography, and it emerged that the weight could be predicted very reliably by measurement of the adenoidal shadow on a standard lateral radiograph of the skull.[4] Hibbert and Stell[5] then showed that the size of the patient's adenoids did not differ significantly from that of the controls (children attending for a head injury). Evidently the symptoms and

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with exudate. The patient is usually febrile and quite ill. Should that patient with a history of frequent sore throats return with the next episode, and should the diagnosis of tonsillitis be confirmed, then that patient should be offered a tonsillectomy.

This does not mean that he *must* have his tonsils removed. It is not a life or death decision. Tonsillitis can always be treated medically, even though an occasional attack may require a period of hospitalization with IV antibiotics. Any formula for tonsillectomy which requires a specific number of attacks in a given period of time has to be meaningless, because such formulae do not consider the severity of the attacks. The parents of a child with mild tonsillitis occuring every two months may be very satisfied with appropriate medical treatment. On the other hand, an adult who loses two weeks of work every other year may be most anxious for surgical relief. The patient with documented tonsillitis whose attacks are of such frequency or severity that he or his parents want the tonsils removed should not be denied that surgery. Conversely, the physician who recommends a tonsillectomy on the basis of frequent and/or severe attacks of documented tonsillitis should respect the wishes of a patient who may opt for medical therapy. Such a patient should be cautioned, however, that tonsillitis is a significant illness, not to be neglected. Each suspected attack should be evaluated, since the sequelae of untreated streptococcal infection may be considerable.

Peritonsillar abscess, which many texts consider an absolute indication for tonsillectomy, is not the life-threatening illness it once was. The condition should be considered as a severe bout of tonsillitis, with recommendation for surgery based on the criteria discussed above.

Indications for adenoidectomy are generally obstructive rather than infectious. The facial deformity of obstructed nasal breathing is a well accepted entity. Cor pulmonale secondary to nasal obstruction has been documented. Enlarged adenoids are easily seen on a lateral skull x-ray. Their removal provides immediate relief.

Eustachian tube obstruction due to enlarged adenoid is not as well accepted as formerly. Frequent otitis media or persistent middle ear effusion with demonstrably enlarged adenoids may be relieved by adenoidectomy, but the results of this surgery are often disappointing. Many children with middle ear disease do not have large adenoids. One must be careful, therefore, in recommending adenoidectomy in all cases of middle ear disease in children. Prolonged antibiotic treatment, allergic management, and/or indwelling tympanostomy tubes may be required to handle these problems. In adult otitis media, adenoidectomy need rarely be considered, since this tissue tends to shrink away after puberty.

The role of tonsils and adenoids in recurrent sinusitis, various orthodontic disorders, "tongue thrust," and articulation problems (other than those related to nasal

Continued on page 687

signs attributed to adenoidal disease are not due to hypertrophy of that organ.

The alternative explanation, put forward by some of the consultants interviewed, was that the adenoid causes disease because it is infected.[2] Although adenotonsillectomy does alter the microflora of the pharynx,[6] there has been no proof that the adenoid is truly infected. Histological examination of adenoids removed at operation revealed no evidence of acute inflammation, but only lymphoid tissue in a highly reactive state.[7] If the adenoids are neither hypertrophic nor infected, in what way are they diseased?

One of the main arguments advanced by adenoidectomists is that the children are so much better afterwards — at least their mothers say they are. A further study[8] shows that this is not true either. Two matched groups of children were studied; one group underwent tonsillectomy, and the other tonsillectomy plus adenoidectomy (the indication in both groups was recurrent sore throats, and the adenoids were removed concidentally, as is common practice, in the second group). The symptoms and signs attributed to adenoidal disease were equally frequent in the two groups, and six weeks after operation they had regressed almost completely in both groups (except mouth breathing, which became more common). The ritual addition of adenoidectomy to tonsillectomy thus seems to confer no benefit. Furthermore, and more importantly, the mother will say that the child is better even if the adenoids have not been removed. The question of serious otitis media remains to be examined. At least one aspect of the assessment of adenotonsillectomy — both its indications and results — is now becoming clear. A history from the mother is valueless, and objective methods must be sought.

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2. Hibbert, J. *Clin. Otolar.* 1977, 2, 239.
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Arizona Medicine

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Use of the Emergency Department in Education

In changing from "the accident room" to a department coordinating pre-hospital care with the definitive services available in the hospital, there has been increasing involvement of the emergency department of modern hospitals in education. Where training of physicians or nurses is intrinsic to the responsibility of a department, this function is obvious. With new residencies in emergency medicine, expanded nursing programs in emergency care and administration, and the advent of extensive training programs for emergency medical technicians and paramedics, University Hospital, like many others, has been called upon to provide new opportunities for observation and supervised educational experience.

Emergency care differs significantly from other disciplines and accordingly educational activities reflect these differences. In true emergency circumstances, time is an essential ingredient in the success of care. In such circumstances initiation of care with an incomplete data base is essential to patient survival. The physician providing care and teaching under such circumstances must recognize and teach this difference. Educational programs thus stress proficiency in the initial evaluation and management of diseases in many classical disciplinary areas and also maintenance or development of depth of knowledge in areas peculiar to emergency situations.

Effective utilization of the hospital emergency department in education depends upon a cooperative interaction with other departments. Quality of patient care is enhanced by rapid and effective utilization of whatever talents are available in the institution. University Hospital with its unique physical attachment to the College of Medicine permits the patient to receive the highest possible level of care from the resources of both institutions. In many circumstances multiple consultations including specific and appropriate laboratory studies are required soon after arrival at the hospital. These may increase both complexity and cost and yet should be cost effective through enhancing the quality of the patient care.

Teaching by example associated with positive attitudes contribute to the effective use of an emergency department in education. All individuals being schooled must be sensitive not only to the emotional stress surounding the sick or injured patient, but also those who accompany the patient or are otherwise a part of the emergency situation. Such attitudes and examples not only help to establish a milieu appropriate for education, but also become important in staff development, inservice education, and recruitment.

The emergency department of University Hospital has become highly dependent on effective interdisciplinary interaction in many areas. Most obvious are the interactions with colleagues and other hospital departments. With basic and continuing education, and supervision of paramedics and emergency medical technicians, other important interactions both in and out of the institution have increased. The physicians or nurse educators quite rightly have significant concern in teaching and taking responsibility for the acts of these individuals who provide an extension of treatment for patients prior to arrival at the hospital emergency area. This interaction requires special and accomplished communication skills.

In attempting to assure available basic life support in less than five minutes and advanced life support in less than fifteen where needed, the medical profession has undertaken a major task in education as well as service. Johnson et al[1] have discussed recently the impact of this on university teaching hospitals. Similar issues are involved in many other hospitals. With expanded public demand for service and growth of knowledge in all traditional disciplines, departments of emergency medicine have served an increasingly important role in both care and education. The future of education in University Hospital, indeed all hospital departments, will depend upon public demand, resources provided, and the cooperative interface with all other medical disciplines.

John H. Hughes, M.D.
Director, Emergency Services
University of Arizona

Louis J. Kettel, M.D.
Dean, College of Medicine
University of Arizona

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1. Johnson, G. Jr.; Krome, R.L.; Moylan, J.A.; Wagner, D.K.: The Emergency department Physician and University Teaching Hospitals. Arch of Surgery 113: 678-683, June 1978.

Auxiliary Highlights

AMA-ERF — What is it?

We welcome Mrs. Howard W. Kimball as guest editor this month. Ella has a productive background in Auxiliary interests through Maricopa Auxiliary and the state presidency prior to serving in National capacity. She currently serves as Western Regional Chairman of A.M.A.-E.R.F. and writes the following in urging support.

The cost of providing quality medical education and supporting research in the medical institutions of this country is staggering. Improving the quality of medical education, increasing the supply of physicians, and expanding into new programs of medical research often mean providing better and larger facilities, more equipment, and additional faculty. Many schools, even those with substantial endowments, lack the funding to meet these new requirements without assistance. Their financial problems have been compounded in recent times because of spiraling costs and shrinking governmental subsidies. Consequently, such institutions must depend increasingly on private sources to meet these needs.

The *American Medical Association Education and Research Foundation*, a non-profit organization, was established in response to the needs. AMA-ERF is engaged principally in supporting medical education and providing financial assistance to medical students, interns and residents.

At our 1978 Arizona State Convention in Tucson, the Dean of the Medical School was presented with an unrestricted check in the amount of $7,094.96. This is a result of your work and contributions to AMA-ERF the past year. To quote Dean Louis J. Kettel, M.D., "During the past year, the College of Medicine has used AMA-ERF funds to further develop teaching in physical diagnosis, provide some travel funds for students to attend scientific and other educational meetings, and to assist in obtaining visiting professorships to enrich ongoing programs."

The Loan Guarantee Fund was established in 1962. Students may borrow up to $2,500.00 per year, but not more than $12,500 in a seven-year period. Ten banks throughout the U.S. participate in this loan program. The Valley National Bank here in Arizona is one of the participating banks. In Arizona last year, 83 loans totaling $117,800.00 were made. Sixty of these loans were to medical students and 23 to interns and residents.

Because of the increased number of requests for loans, the Loan Guarantee Fund is seriously in need of monies. Your contributions can be specifically designated to the medical school of your choice or to the loan fund. When making your 100% tax deductible donation, please indicate where you wish your contribution channeled.

As physicians' spouses, we should be vitally interested in the future of medicine in this country and the betterment of medical education. The physicians of tomorrow need your help today. Don't let them down. Your efforts on their behalf will enable them to fulfill the lifetime of service and dedication to their fellow man which they, as you, have chosen to give.

Mrs. Howard W. (Ella) Kimball
Western Regional AMA-ERF Chairman

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ArMA Reports

THE MINUTES APPEARING IN THIS SECTION HAVE BEEN EDITED TO CONSERVE SPACE. A COMPLETE COPY OF THE MINUTES OF ANY MEETING WILL BE MAILED TO ANY MEMBER REQUESTING THEM.

EXECUTIVE COMMITTEE

The meeting of the Executive Committee of the Arizona Medical Association, Inc., held at 810 W. Bethany Home Road, Phoenix, Arizona on Saturday, June 10, 1978, a quorum being present, convened at 10:07 a.m., Richard L. Dexter, M.D., President and Chairman, presiding.

RESOLUTION 7-78
PROVIDING COPIES OF PATIENT HOSPITAL BILLS TO PHYSICIANS

The Executive Committee gave consideration to Substitute Resolution 7-78 adopted during the recently concluded annual meeting concerning the best method of implementation. It was noted that the Arizona Hospital Association addressed the 2nd and 3rd resolved of the Resolution in their memorandum of June 1, 1978, to administrators of their member institutions.

IT WAS MOVED AND CARRIED TO SEND THE RESOLUTION TO EACH HOSPITAL CHIEF OF STAFF URGING THEM TO REVIEW THE RESOLUTION WITH THE ADMINISTRATION SEEKING COOPERATION IN CARRYING OUT THE INTENT OF THE RESOLUTION. FURTHER, THAT THE RESOLUTION BE SENT TO OUR COUNTY MEDICAL SOCIETIES WITH THE SUGGESTION THAT THEY MAY WISH TO MEET WITH HOSPITAL CHIEFS OF STAFF IN AN EFFORT TO FIND WAYS TO MAKE QUALITY MEDICAL CARE COST EFFECTIVE.

OPERATIONS OF THE CLAIMS & UNDERWRITING REVIEW COMMITTEES

Question has been raised by legal counsel concerning the potential of anti-trust risk posed by the operations of the Claims Review Committee and Underwriting Review Committee of this Association. Counsel advises that every attempt should be made to keep the workings of these Association Committees as impartial and as remote from the workings of the insurance company as possible. Procedures and staffing of the Committees should be handled as close to the way other committees of the Association are handled as practical and insure that the committees are of the Association and not of the insurance company. Suggested drafts of communications to the Chairman of the Claims Review Committee and Underwriting Review Committee plus suggested letter of transmittal of recommendation to the insurance company were reviewed and are on file. Further, additional guidelines for the Underwriting Review Committee concerning strict confidentiality of the deliberations were also reviewed and are on file.

IT WAS MOVED AND CARRIED TO ACCEPT THE SUGGESTIONS OF LEGAL COUNSEL AND STAFF FOR ADDITIONS TO THE CLAIMS AND UNDERWRITING REVIEW COMMITTEE PROCEDURES AND GUIDELINES.

CERTIFICATE OF NEED
PHYSICIAN'S OFFICES

Dr. Dexter and Mr. Barnett reported on the attempt by the Health Systems Agency in Southeastern Arizona (Tucson) to provide legislation which would authorize a voluntary certificate of need, review and comment, respecting purchase of costly equipment by physicians. It appeared that Mr. Scott Alexander of the Tucson office of Arizona Blue Cross/Blue Shield was also involved in promoting this legislation vigorously opposed by the Association. The Committee reviewed copy of letter by Mr. Forrest Barr, legal counsel for Blue Cross/Blue Shield, as well as an opinion by the State Department of Insurance in which it upheld the "blues" ability to separate the professional component and the equipment component of a CAT scan and disallow payment of the equipment component as it was not covered by a certificate of need process. The matter is being appealed to the department of insurance. CONSIDERABLE DISCUSSION ENSUED.

IT WAS MOVED AND CARRIED THAT THE ARIZONA MEDICAL ASSOCIATION EXPRESS ITS CONCERN TO THE BOARD OF DIRECTORS OF BLUE CROSS/BLUE SHIELD OF ARIZONA, THAT IT APPEARS THAT THE STAFF OF BLUE CROSS/BLUE SHIELD OF ARIZONA IS ADVOCATING CERTIFICATE OF NEED LEGISLATION FOR PHYSICIANS' OFFICES.

IT WAS MOVED AND CARRIED THAT THE ARIZONA MEDICAL ASSOCIATION APPROVE THE PRINCIPLE OF REVIEW AND COMMENT (CERTIFICATE OF NEED) RESPECTING THE PURCHASE OF COSTLY EQUIPMENT FOR USE IN PHYSICIANS' OFFICES BY THE COUNTY MEDICAL SOCIETY. FURTHER THAT THIS PRINCIPLE OF REVIEW BE SUBMITTED TO EACH OF THE COUNTY MEDICAL SOCIETIES AND THE AD HOC COMMITTEE ON HEALTH CARE COST FOR THEIR CONSIDERATION.

ARMA's 1978 AND 1979 BUDGET

Mr. Robinson reported that the treasurer of Maricopa Medical Society, Earl J. Baker, M.D., requested and has received the detailed budget of ArMA for 1978 and 1979. RECEIVED FOR INFORMATION ONLY.

NEGOTIATING SEMINAR

Dr. Dexter reported that the AMA Department of Negotiations are co-sponsoring with state medical societies negotiation programs. These programs are of 2½ days or 1½ days duration and held at a site chosen by the local society. The societies' costs are limited to the expense of faculty, facilities, audio visual equipment, promotion and reproduction of a workbook, therefore the registration fees are established locally. The cost of a 2½-day program which includes the psychological aspects is approximately $2,000, where the cost of a 1½-day program is approximately $1,200. The programs are an effort to help physicians preserve the physician-patient relationship and improve the quality of patient care by effectively coping with HSA, government agencies, insurance, hospital management, etc.

IT WAS MOVED AND CARRIED TO CO-SPONSOR A NEGOTIATION PROGRAM WITH THE AMA IN JANUARY 1979 FOR APPROXIMATELY 30 PEOPLE WHICH WOULD INCLUDE MEMBERS OF THE BOARD OF DIRECTORS AND THE MEDICAL ECONOMICS COMMITTEE.

ATTORNEY GENERAL DEMAND
STATUS REPORT

Mr. Robinson informed the Executive Committee that thus far 121 hours had been expanded in his time to answer the Attorney General demands with 2474 copies of minutes, correspondence, etc., and that the legal fees through May 31 amount to $3,493.50. Today it was learned that the Attorney General has made the same demands on specialty societies of Arizona as well as the Arizona Osteopathic Association. RECEIVED FOR INFORMATION.

IRS AUDIT
STATUS REPORT

Mr. Robinson reported that since the on-sight audit in late March, there has been no further activity and we are still waiting a response from the auditor. Total legal fees expended through May 31, 1978, on this project is $407.50. RECEIVED FOR INFORMATION.

AMA ANNUAL MEETING
NATIONAL COMMISSION ON THE COST OF MEDICAL CARE

Each member of the Executive Committee, delegates, and alternate delegates to the AMA have received and reviewed the recommendations of the National Commission on the cost of medical care, the AMA Board of Trustees recommendations plus the many resolutions introduced on the subject. It was noted that the 48 recommendations plus the Board of Trustees comments on each were distributed among the reference committees for consideration. After considerable discussion it was determined that the delegates would carefully follow the substitute resolution 10-78 adopted by the Arizona Medical Associations House of Delegates and the report of the AD HOC Committee on Health Care Cost adopted by the Board of Directors on April 25, 1978, and attached to the resolution. It was noted that legal counsel had not yet had an opportunity to review the report of the AD HOC Committee on Health Care Cost for antitrust implications and that prior to utilization of the report this should be so noted.

OTHER BUSINESS
MEDICARE PAYMENT LISTS

Mailgrams were received from the counsel of medical staffs and the AMA concerning the temporary restraining order against HEW from making public a list identifying each physician who provided services and the amount of Medicare payments reportedly generated during 1977 of the Medicare program. RECEIVED FOR INFORMATION.

SECOND OPINION PROGRAM

Mr. Robinson informed the committee that HEW appears to be starting a second opinion program for Medicare through the local PSRO. The regional office out of San Francisco is working through the Maricopa Foundation for Medical Care as well as the Pima Foundation for Medical Care (PSRO) to establish such a program through the county medical societies. RECEIVED FOR INFORMATION ONLY.

ARTICLES OF INCORPORATION AND BYLAWS COMMITTEE

The meeting of the Articles of Incorporation and Bylaws Committee of the Arizona Medical Association, Inc., held at 810 W. Bethany Home Rd., Phoenix, Arizona, on Saturday, June 24, 1978, a quorum being present, convened at 2:02 p.m., Charles E. Henderson, Chairman, presiding.

RESOLUTION 8-78

REDUCED DUES FOR THE NEW PHYSICIAN JUST STARTING PRACTICE IN ARIZONA

Dr. Henderson presented substitute resolution as amended by the House of Delegates on April 29, 1978. The resolution is as follows:

RESOLVED, That the Articles of Incorporation and Bylaws Committee of this Association be directed to prepare the necessary bylaws changes that would make it possible for the newly established physician to become a member of the Association by reduction of dues structure as determined by the Board of Directors and that the new dues structure be acted upon at the next regular or special session of the House of Delegates; and be it further

RESOLVED, That the component county medical societies and the American Medical Association be encouraged to adopt a similar dues reduction in coordination with the state Association.

The committee reviewed report of the AMA Board of Trustees to the House of Delegates was adopted during the most recent House of Delegates meeting, as well as the Arizona delegates resolution to the AMA. It is noted that the position adopted by the AMA is "reduce AMA dues by 50% for one year for physicians first entering practice." It is presumed that this policy will begin with the 1979 billing year. The House of Delegates also referred to the Board of Trustees for consideration, the subject of allowing a physician to have a reduction of 50% dues during the first year of membership so long as he joins during the first 5 years of practice. Also, the Board of Trustees is taking under consideration a resolution that when a state medical society has adopted unified membership, which makes AMA membership mandatory, the billing for AMA dues shall be 95% of the established rate for all membership categories.

IT WAS MOVED AND CARRIED TO RECOMMEND TO THE BOARD OF DIRECTORS THE FOLLOWING RESOLUTION TO OFFER A REDUCTION IN DUES FOR NEW MEMBERS TO 50% FOR THE FIRST YEAR OF MEMBERSHIP IN THE ARIZONA MEDICAL ASSOCIATION:

"**Section 3. Equality Within Membership Categories of Dues and Assessments: —**

While the amount of dues or special assessments may vary as between classifications of membership (except as to certain classes upon which none may be levied as provided in subsection 5 hereof), they shall be uniform within each classification, except for service, intern, and resident active members (see Chapter II, Section 3), AND NEW MEMBERS (SEE CHAPTER IX, SECTION 4).

"**Section 4. New Members; Dues; Assessments; Collection and Payment: —**

"(a) THE DUES OF NEW MEMBERS SHALL BE ONE-HALF THE ANNUAL DUES FOR THE YEAR IN WHICH THEY FIRST BECOME A MEMBER.

"(b) Their dues of new members elected between July first and November first shall be one-half THEIR (the) annual dues for that year. New members elected in November and December shall pay dues for the succeeding year, which payment shall be taken also to include dues for the balance of the current year. Any forgiveness of the dues and assessments of the American Medical Association shall be in accordance with the rules and regulations of that association, and any forgiveness of special assessments shall be according to such as may have been provided by the meeting of the House levying such special assessment.

"(c) The secretary of each county society shall collect and forward the dues of new members to the Association Secretary. Membership in the Association shall not be effective until the same are received by the Association Secretary."

EXECUTIVE COMMITTEE

The meeting of the Executive Committee of the Arizona Medical Association, Inc., held at 810 West Bethany Home Road, Phoenix, Arizona, on Friday, July 14, 1978, a quorum being present, convened at 6:41 p.m., Richard L. Dexter, M.D., President and Chairman, presiding.

DEPARTMENT OF HEALTH SERVICES

Dr. Dandoy reviewed various activities including: Maricopa County Medical Society's interest in the many ramifications of P.L. 93-641. Senate Bill 1001 — the Sunset Law which would effect the DHS in 1990. The new assignment of Emergency Medical Service activities. The Mobile Dental trailer activity. New superintendent of the Arizona State Hospital and a new residency program in preventive medicine.

HEW'S SECOND OPINION PROGRAM

The subject program was reviewed.

IT WAS MOVED AND CARRIED TO RECOMMEND TO THE BOARD OF DIRECTORS THAT ANALYSIS INDICATES THAT, IF THE PROGRAM WERE CARRIED OUT BY ArMA OR THE COUNTY MEDICAL SOCIETIES, IT WOULD BE DISCRIMINATORY AS IT WOULD INVOLVE ONLY OUR MEMBERS; THEREFORE, WE SHOULD NOT PARTICIPATE.

REDUCED FEES FOR NEW MEMBERS

House of Delegates Resolution 8-78 along with the Articles of Incorporation & Bylaws Committee's recommendations on this matter were reviewed.

IT WAS MOVED AND CARRIED TO RECOMMEND TO THE BOARD OF DIRECTORS THAT THE DUES BE 50% OF THE REGULAR DUES DURING THE FIRST YEAR OF MEMBERSHIP AND 75% OF REGULAR DUES DURING THE SECOND YEAR OF MEMBERSHIP.

RESOLUTION 7-78

The subject resolution re: educating physicians on the cost of hospitalization was discussed. It was reported that this resolution had been sent to all county medical societies and Chiefs-of-Staff, with several responses having been received to date. RECEIVED.

MATCHES

The concern of David H. Drachler, M.D., about having matches in the building was discussed. It was determined to thank the doctor for his interest.

1979 BUDGET REVIEW

It was reported that a special committee of the Maricopa County Medical Society is in the process of reviewing ArMA's 1979 budget and that they have requested a meeting on August 19th with the President, Present and Past Treasurer and the Executive Director. RECEIVED.

MEDICAL ASSOCIATION OF GEORGIA

The 7/6/78 letter from the subject organization asking us to adopt a position statement regarding balancing the federal budget was reviewed and referred to the Governmental Services Committee for review and recommendation.

FLAGSTAFF COMMUNITY HOSPITAL vs. DARIUS BENHAM, M.D.

Mr. Jacobson reported that the Arizona Supreme Court refused, 7/11/78, to take jurisdiction in the subject case. RECEIVED.

CENTRAL ARIZONA HEALTH EDUCATION CENTER

The request to endorse the subject program was reviewed. It was determined that not enough data was available to act on this request. Mr. Robinson was asked to obtain a complete copy of the grant application.

REVIEW OF BOARD OF DIRECTORS AGENDA

The committee reviewed the agenda for the 7/15/78 Board of Directors meeting and prepared several suggestions.

OTHER BUSINESS

Negotiating Seminar

It was determined to set January 20-21, 1979, as the date for AMA Seminar on Negotiations.

BOARD OF DIRECTORS

The meeting of the Board of Directors of the Arizona Medical Association, Inc., held at 810 West Bethany Home Road, Phoenix, Arizona, on Saturday, July 15, 1978, a quorum being present, convened at 10:04 a.m., Richard L. Dexter, M.D., President and Chairman, presiding.

ArMPAC REPORT

Dr. Austin, Chairman of ArMPAC, reported on the support ArMPAC was receiving from MICA and the fact that membership had increased to a present total of 563. He also reported that the Board for ArMPAC had been reconstituted and a first meeting had been held.

AUXILIARY REPORT

Mrs. John T. Clymer appeared before the Board on behalf of Mrs. Carolyn Parsons, President of the auxiliary, and briefly discussed the immunization program outlined in the report previously distributed to the Board members for review and information.

Pima Council to Immunize Arizona's Children.

A request for endorsement from the Pima Council to Immunize Arizona's Children was presented to the Board for review and consideration. Following discussion,

IT WAS MOVED AND CARRIED TO ENDORSE THE PROGRAM OF THE PIMA COUNCIL TO IMMUNIZE ARIZONA'S CHILDREN WHICH IS DESIGNED TO EDUCATE PARENTS TO THE NEED FOR EARLY IMMUNIZATION AS WELL AS THE NEED FOR KEEPING ACCURATE FAMILY IMMUNIZATION RECORDS.

BOARD OF DIRECTORS

Status of 1978

House of Delegates Resolutions.

A-1-78 — Membership of Physician's Assistants in ArMA — no further action necessary. RECEIVED.

A-2-78 — Composition of Board of Directors - District Directors — no further action necessary. RECEIVED.

A-3-78 — Professional Committee Section Designation — no further action necessary. RECEIVED.

A-4-78 — Claims Review as Standing Committee — no further action necessary. RECEIVED.

A-5-78 — Underwriting Review as Standing Committee — no further action necessary. RECEIVED.

1-78 — The Economic Organization for Arizona Physicians — Arizona Physicians Guild.

IT WAS MOVED AND CARRIED TO ASK THE PRESIDENT TO APPOINT AN AD HOC COMMITTEE, WITH CONFIRMATION BY THE EXECUTIVE COMMITTEE, TO CARRY OUT THE DIRECTIVE OF RESOLUTION 1-78.

It was announced that a seminar on negotiations has been scheduled for January 20-21, 1979, to which all members of the Board of Directors will be invited.

2-78 — 1979 Calendar Year Budget of Income and Expense — no further action necessary. RECEIVED.

3-78 — Malpractice Insurance as Prerequisite for Hospital Staff Membership — Policy — no action necessary. RECEIVED.

6-78 — Laetrile — Policy — no action necessary. RECEIVED.

7-78 — Providing Copies of Patients' Hospital Bills to Physicians — Resolution has been forwarded to all County Medical Society Presidents and Secretaries as well as all Hospital Chiefs of Staff.

Concern was expressed that the manual of charges to be made available by hospitals would not be a truly effective mechanism of communicating costs to physicians. Dr. Dexter was asked to discuss this further with the ArHA Board of Directors; hopefully such discussions would result in a more effective mechanism being created.

Further discussion of this matter ensued culmination in the following action:

IT WAS MOVED AND CARRIED THAT, IN COMPLIANCE WITH RESOLUTION 7-78, THE COUNTY MEDICAL SOCIETIES COORDINATE PHYSICIANS' HEALTH CARE COST ACTIVITIES WITHIN THEIR GEOGRAPHIC AREAS AND THAT THE DISTRICT DIRECTORS BE ASKED TO REPORT SUCH ACTIVITIES AT THE NEXT MEETING OF THE BOARD OF DIRECTORS.

8-78 — Reduced Dues for the New Physician Just Starting Practice.

The Articles of Incorporation and Bylaws Committee's proposed resolution, which resulted from Resolution 8-78, was discussed at great length, primarily over the issue of whether the reduction of dues should be for one or two years.

IT WAS MOVED AND CARRIED TO RECOMMEND TO THE HOUSE OF DELEGATES THAT THE DUES OF NEW ACTIVE MEMBERS BE ONE-HALF THE ANNUAL DUES FOR THE FULL CALENDAR YEAR IN WHICH THEY FIRST BECOME A MEMBER AND THAT THE DUES BE THREE-FOURTHS THE ANNUAL DUES FOR THE SECOND FULL CALENDAR YEAR OF MEMBERSHIP.

9-78 — Distribution of Report: "Divided They Were Conquered" — Report distributed as directed — no further action necessary. RECEIVED.

10-78 — HEALTH CARE COST Containment.

Legal counsel reviewed his correspondence relating to the anti-trust aspects of the Report of the Ad Hoc Committee on Health Care Cost indicating that disseminating the report was of little risk, but trying to implement portions of the report could create some risks.

IT WAS MOVED AND CARRIED TO DISTRIBUTE THE REPORT TO THE FOLLOWING GROUPS:

1. ALL LICENSED PHYSICIANS IN ARIZONA;
2. ARIZONA HOSPITAL ASSOCIATION MEMBERS;
3. STATE LEGISLATORS;
4. ARIZONA CONGRESSIONAL DELEGATION;
5. NEWS MEDIA.

11-78 — Director of Health Department for Santa Cruz County — Board of Health and Board of Supervisors notified of action. No further action appears necessary. RECEIVED.

EXECUTIVE COMMITTEE

Membership Classification Changes Approved.

Maricopa County Medical Society

James R. Atkinson, M.D. — Dues Refund — Account Deceased — Effective 1978.

H.S. Fuson, M.D. — Active to Active Over 70 — Effective 1/1/78 — Dues Exempt.

Daniel S. Graves, M.D. — Active to Associate — Account Residency — Effective 6/1/78 — Dues Exempt (Refund Balance of 1978 Dues).

Franklin S. Horowitz, M.D. — Active to Active Over 70 — Effective 1/1/78 — Dues Exempt.

Pierre N. Levin, M.D. — Active to Associate —Account Retirement — Dues Exempt.

David Pent, M.D. — Active to Associate — Account Retirement — Effective 7/1/78 (Refund One-Half Dues).

Samuel I. Rothman, M.D. — Active to Associate — Account Retirement — Dues Exempt — Effective 1/1/78.

Pima County Medical Society.

Herbert K. Abrams, M.D. — Active to Associate — Account Retirement — Dues Exempt — Effective 7/1/78.

Milton Davis, Jr., M.D. — Active to Associate — Account Retirement — Dues Exempt — Effective 7/1/78.

Henry C. Goss, M.D. — Active to Associate — Account Retirement — Dues Exempt — Effective 1/1/78.

FINANCE COMMITTEE

The financial statement for the period ending 6/3/78 was reviewed. RECEIVED.

MEDICAL ECONOMICS COMMITTEE

The letter from the Industrial Commission of Arizona stating that there will be no increase in the ICA fee schedule for the 1978-79 year was reviewed. RECEIVED.

AMA DELEGATES

Reports of AMA Delegates, W. Scott Chisholm, Jr., M.D., and Arthur V. Dudley, Jr., M.D. — RECEIVED FOR INFORMATION.

CORRESPONDENCE

Goldberger Award

AMA letter regarding the Goldberger Award — RECEIVED FOR INFORMATION.

Membership

The Board briefly discussed the letter of Morris H. Fine, M.D., dated May 1, 1978, at it was agreed that a response to the letter would be timely made.

OTHER BUSINESS

Second Consultation Program

Discussion was held on the letter received from HEW dated July 7, 1978.

IT WAS MOVED AND CARRIED THAT THE ASSOCIATION BY AFFIRMATIVE STATEMENT AND BY INCLUSION OF THE AMA POLICY STATEMENT WOULD CONTACT ALL COUNTY SOCIETIES, REQUESTING THEIR RESPONSE TO THE INSTITUTION OF A SECOND OPINION PROGRAM AND THAT, SUBSEQUENTLY, SUCH INFORMATION WOULD BE SUBMITTED TO HEW.

ArMA Scholarship Awards

Dr. Dudley discussed the award of scholarships by ArMA and advised that there would shortly be a press release made regarding the same. This year's recipients were Steven E. Evans of Phoenix; Rosalie F. Kame of Hayden; Mary B. Saufferer of Paradise Valley; and Mark S. Wurzel of Tucson.

Board of Medical Examiners Appointments

The Board of Medical Examiners appointments recently made by Governor Babbitt were reported by Mr. Boykin.

SCIENTIFIC ASSEMBLY COMMITTEE

The meeting of the Scientific Assembly Committee of the Arizona Medical Association, Inc., held at 810 West Bethany Home Road, Phoenix, Arizona, on Saturday, August 12, 1978, a quorum being present, convened at 10:09 a.m., Marvin C. Schneider, Chairman, presiding.

ELECTION OF VICE-CHAIRMAN 1980 ANNUAL MEETING

James M. Hurley, M.D., was elected as Vice-Chairman of the Committee, with the understanding that he will serve as chairman for the 1980 meeting.

FUTURE MEETINGS AND DATES

Mr. Robinson reported that we have confirmations for annual meetings as follows:

1979 - Safari Hotel - April 25-29, 1979
1980 - Registry Resort - Scottsdale -
April 30 - May 4, 1980

IT WAS MOVED AND CARRIED THAT THE 1981 ANNUAL MEETING OF ArMA be HELD IN THE PHOENIX-SCOTTSDALE AREA.

IT WAS MOVED AND CARRIED THAT THE AUXILIARY BE CONSULTED REGARDING FINAL SELECTION OF THE SITE FOR THE 1981 ANNUAL MEETING.

CHOICE OF SCHOOL FOR 1980

IT WAS MOVED AND CARRIED THAT THE OFFER TO PRESENT THE 1980 ANNUAL MEETING PROGRAM BE MADE TO THE UNIVERSITY OF COLORADO MEDICAL SCHOOL, WITH ALTERNATES TO INCLUDE STANFORD UNIVERSITY COLLEGE OF MEDICINE, UNIVERSITY OF SOUTHERN CALIFORNIA SCHOOL OF MEDICINE AND THE UNIVERSITY OF ILLINOIS SCHOOL OF MEDICINE.

IT WAS MOVED AND CARRIED THAT, SHOULD THE UNIVERSITY OF COLORADO MEDICAL SCHOOL NOT BE AVAILABLE, THE FINAL DECISION AS TO THE ALTERNATE SCHOOL BE LEFT TO THE DISCRETION OF THE CHAIRMAN OF THE 1980 MEETING.

University of Arizona.

The University of Arizona's offer to provide the program for 1980, contained in its letter of October 17, 1977, was discussed and it was determined not to accept the generous offer at this time. RECEIVED.

Survey of Membership by Medical School.

The committee reviewed and discussed the survey of membership and it was the consensus of opinion that a new survey should be taken in order to update the present information. RECEIVED.

REVIEW OF 1978 MEETING

Attendance Report of ArMA Members.

Year	Attend	M'mbr	%	Location
1978	421	2,554	16.5	Mariott-Tucson
1977	498	2,556	19.4	Hyatt Regency-Phx
1976	704	2,471	28.5	Safari Hotel-S'dale
1975	459	2,393	19.2	Braniff Hotel-T'son
1974	660	2,232	29.6	Safari Hotel-S'dale
1973	654	2,079	31.5	Safari Hotel-S'dale
1972	550	1,866	29.5	Safari Hotel-S'dale
1971	390	1,745	22.4	Safari Hotel-S'dale
1970	377	1,669	22.6	Safari Hotel-S'dale

1978 Annual Meeting Attendance Report (Detailed).

The report, as presented, was discussed and it was suggested that a mailing be made to all members to ascertain reasons for low attendance at annual meetings. RECEIVED.

Howard J. Reuben, M.D.

Dr. Reuben's letter of 5/2/78 was discussed, following which discussion it was proposed by Dr. Dexter that more recognition be given to the exhibitors at the annual meetings.

Arizona Association of Home Health Agencies.

The thank you letter from the Arizona Association of Home Health Agencies received 5/13/78 regarding its participation as an exhibitor at the 1978 annual meeting was discussed. RECEIVED.

Public Relations Report.

The report of Owens & Associates was reviewed. At this time it was also suggested that the possibility of having someone from the faculty of the annual meeting guest school appear on a panel on "Medical Opinion" as added publicity be pursued. RECEIVED.

Promotional Mailers.

It was pointed out that promotional mailers had been sent to 8,600 out-of-state physicians in surrounding states, at a cost of $4,875.65. Result: 20 registrations, 15 of which were from states not promoted. Following discussion,

IT WAS MOVED AND CARRIED TO ELIMINATE OUT-OF-STATE MAILINGS REGARDING THE ANNUAL MEETINGS.

MEDICAL ASSOCIATION OF GEORGIA

The report regarding the conduct of annual meetings by the Medical Association of Georgia was received and discussed, with the decision being made that the format was a good one and should be considered by Dr. Hurley in planning the 1980 program. It was suggested that Dr. Hurley, using the Georgia report and his own ideas, present a brief report at the next meeting of the committee.

PLANS FOR 1979 MEETING

General Format.

The general format, as approved by the Board of Directors, was discussed by the committee and the following determinations were made:

Golf - Robert L. Hagan, M.D., be asked to be the Golf Tournament Chairman.

Tennis - Wilfred M. Potter, M.D., be asked to be the Tennis Tournament Chairman.

Proposal from the University of Kansas Medical Center - College of Health Sciences & Hospital.

The letter of R. Neil Schimke, M.D., dated 5/24/78 was discussed by the committee. RECEIVED.

Scientific Program Work Sheets.

The worksheets, as presented, were reviewed. RECEIVED.

Topics Presented During 1978, 1977 and 1976.

The committee briefly reviewed the lists of topics to avoid duplication. RECEIVED.

Additional Topics and Speakers to be Requested from the University of Kansas Medical Center.

All of the foregoing were discussed in conjunction with one another and it was agreed that the general format as presented by Dr. Schimke was not adequate and that the Chairman would develop further contact with Dr. Schimke in an effort to arrange for other speakers, and more/alternative topics.

1. It was agreed that the Chairman would specifically request Dr. Kirschner to speak on otolaryngology, head and neck surgery, and possible other subjects.
2. It was agreed that Dr. Thomas Bittker would be asked to present a program on physical fitness.
3. More suggested topics were surgery, trauma, emergency care.
4. Dr. Austin was requested to approach Dr. Krantz to see what topics he might be willing to discuss and length of program he could present.
5. It was agreed that the University of Arizona would be used to provide programs for slots unfilled by the University of Kansas.
6. Also discussed were possibilities of programs being provided by Dr. Campbell and/or Dr. Gould on psychiatry; by Dr. Garrett on athletic injuries; and that the Chairman would pursue an offer from U.S. Vitamin to present a program on hypertension.

Local Papers.

Local papers were briefly discussed and it was agreed to follow previous years' policy of solicitation.

Auxiliary Program Plans

Mrs. Carolyn Parsons and Mrs. Eloise Clymer both appeared on behalf of the Auxiliary to present tentative program plans. Mrs. Clymer reported briefly on their ideas for programs to fill available slots in the program for the 1979 annual meeting, consisting of possible sessions on physician and marriage, coping with stress, continuing medical education for nurses, demands of practice and life on physician and family. After discussion of these topics and available times and schedules, it was agreed that the Chairman, Executive Director, Mrs. Parsons and Mrs. Clymer would meet on Thursday, August 31st, to finalize time slots and program formats for the auxiliary's participation.

Moderators.

IT WAS MOVED AND CARRIED THAT MEMBERS OF ArMA, INCLUSIVE OF THE MEMBERS OF THIS COMMITTEE, ACT AS MODERATORS FOR THE 1979 ANNUAL MEETING.

It was additionally the consensus of the committee that written requests be made by Dr. Hurley to all specialty societies to provide the committee with a list of names of persons willing to act as moderators for the 1979 or subsequent annual meetings.

Guest Hosts.

Also discussed was the practice of assigning a guest host from members of the committee for each guest speaker during their stay in the Phoenix area and, additionally, providing to the auxiliary a list of the guests to enable the auxiliary to extend invitations to the wives to certain of the functions.

CORRESPONDENCE

Fitness Motivation Institute of America letter of 5/1/78. RECEIVED.

EXECUTIVE COMMITTEE

The meeting of the Executive Committee of the Arizona Medical Association, Inc., held at 810 West Bethany Home Road, Phoenix, Arizona, on Friday, August 18, 1978, a quorum being present, convened at 6:40 p.m., Richard L. Dexter, M.D., President and Chairman, presiding.

DEPARTMENT OF HEALTH SERVICES ACTIVITY REPORT

Dr. Dandoy reported that they were recruiting four new physicians in the Department, not counting State Hospital staff, two of which would be a director of Emergency Medical Services and a pediatrician or obstetrician who would head the newborn intensive care program.

Dr. Dandoy also reported that they had recently sent out letters regarding the establishment of regulations for the Metabolic Screening Committee, which procedures should take effect in January.

Dr. Dandoy then proceeded to discuss the financial status of the Crippled Children's program. She stated that the inadequate budget was due to a higher case referral; that the budget had not been cut — they did in fact receive exactly what they had requested from the Legislature. They are assuming that there will be a problem this fiscal year, with all the cases to be referred by physicians and are, in fact, having a meeting in the near future with medical staff of Phoenix and Tucson to discuss problems regarding services, payments, and tailoring funds to needs a little better. She stated that these are serious, but not new problems; that the funds always seemed to run out each spring and that the Legislature would like to see better management to show an attempt to function within the funds allotted. She stated that they were going to try but that they would probably have to go back in the spring with the request for additional money, with the hope that they would not have to deny care or curtail or postpone treatment due to lack of funds. Dr. Dandoy also stated that the problem did not lie in payment of the hospitals, but in payment of many professional and outside services.

SECOND OPINION PROGRAM

HEW's letter of August 8, 1978, indicating that Maricopa and Pima County Medical Societies were among those who would be participating in the Second Opinion Program, was briefly discussed, as well as Mr. Robinson advising the committee that he had been informed that Santa Cruz CMS would also be participating.

RADIATION HANDLING COURSE

The request of Drs. VanNostrand and Harter dated August 8, 1978, for ArMA to sponsor their trip to the Radiation Handling Course at Oak Ridge was discussed.

IT WAS MOVED AND CARRIED THAT,

Continued on page 687

Future Medical Meetings

CONTINUING MEDICAL EDUCATION

The following institutions and organizations have been accredited for their continuing medical education programs by the Liaison Committee on Continuing Medical Education.

- Arizona Heart Institute
- Arizona Medical Association, Inc.
- Arizona State Hospital, Phoenix
- Desert Samaritan Hospital, Mesa
- Good Samaritan Hospital, Phoenix
- Health Maintenance Associates
- Phoenix Indian Medical Center
- Phoenix Psychiatric Council
- Maricopa County General Hospital, Phoenix
- Memorial Hospital, Phoenix
- St. Luke's Hospital & Medical Center, Phoenix
- St. Joseph's Hospital & Medical Center, Phoenix
- Tucson Hospitals Medical Education Program, Tucson
- U of A College of Medicine
- Veterans Administration Center, Prescott
- Veterans Administration Hospital, Phoenix

The accredited institutions and organizations above produce a variety of continuing medical education programs. Each accredited institution and organization is responsible for designating which of these programs meet ArMA's requirements for Category 1 credit. Physicians who participate in programs which are designated Category 1 by accredited institutions will receive Category 1 credit toward the ArMA Certificate in CME and the AMA's Physician's Recognition Award.

Individual program listings below indicate Category of CME. Where not indicated, no credit has been approved. For further information on any programs, contact person named.

OCTOBER

Medical History Society of Arizona, Monday, October 30, 7:30 p.m. at the Preston T. Brown Room, Maricopa County Medical Society, 2025 North Central Ave., Phoenix, AZ. Contact: William Weese, M.D., President (602-265-0000).

NOVEMBER

Medical Assistants

November 2, 1978, 7:15 p.m., Arizona Medical Association building, 810 W. Bethany Home Rd., Phoenix, AZ. Contact: Marylou at 944-4491.

Arizona Medical Assistants Assoc., Maricopa Chapter, Fall Symposium

November 4, 1978, Arizona Medical Assoc. building, 810 W. Bethany Home Rd., Phoenix. Contact: Pauline Vanryn, 943-3562 evenings; 264-3503 days.

Fourth Annual Pediatric & Adolescent Echocardiography Course

November 10-12, 1978. Las Vegas, Nevada. Sponsored by American Society of Echocardiography, American Institute of Ultrasound in Medicine & H.E.L.P. Contact: Pediatric Echocardiography Course, 4340 Placita Panuco, Tucson, AZ 85718. Approved for category 1 credit.

Arizona Medical Assistants Assoc.

All Day Symposium & Organization Meeting November 11, 1978, Roadway Inn,

Tenuate® ⓒIV
(diethylpropion hydrochloride NF)

Tenuate Dospan®
(diethylpropion hydrochloride NF) controlled-release

AVAILABLE ONLY ON PRESCRIPTION
Brief Summary

INDICATION: Tenuate and Tenuate Dospan are indicated in the management of exogenous obesity as a short-term adjunct (a few weeks) in a regimen of weight reduction based on caloric restriction. The limited usefulness of agents of this class should be measured against possible risk factors inherent in their use such as those described below

CONTRAINDICATIONS: Advanced arteriosclerosis, hyperthyroidism, known hypersensitivity, or idiosyncrasy to the sympathomimetic amines, glaucoma. Agitated states. Patients with a history of drug abuse. During or within 14 days following the administration of monoamine oxidase inhibitors, (hypertensive crises may result).

WARNINGS: If tolerance develops, the recommended dose should not be exceeded in an attempt to increase the effect; rather, the drug should be discontinued. Tenuate may impair the ability of the patient to engage in potentially hazardous activities such as operating machinery or driving a motor vehicle; the patient should therefore be cautioned accordingly. *Drug Dependence* Tenuate has some chemical and pharmacologic similarities to the amphetamines and other related stimulant drugs that have been extensively abused. There have been reports of subjects becoming psychologically dependent on diethylpropion. The possibility of abuse should be kept in mind when evaluating the desirability of including a drug as part of a weight reduction program. Abuse of amphetamines and related drugs may be associated with varying degrees of psychologic dependence and social dysfunction which, in the case of certain drugs, may be severe. There are reports of patients who have increased the dosage to many times that recommended. Abrupt cessation following prolonged high dosage administration results in extreme fatigue and mental depression; changes are also noted on the sleep EEG. Manifestations of chronic intoxication with anorectic drugs include severe dermatoses, marked insomnia, irritability, hyperactivity, and personality changes. The most severe manifestation of chronic intoxications is psychosis, often clinically indistinguishable from schizophrenia. *Use in Pregnancy:* Although rat and human reproductive studies have not indicated adverse effects, the use of Tenuate by women who are pregnant or may become pregnant requires that the potential benefits be weighed against the potential risks. *Use in Children:* Tenuate is not recommended for use in children under 12 years of age.

PRECAUTIONS: Caution is to be exercised in prescribing Tenuate for patients with hypertension or with symptomatic cardiovascular disease, including arrhythmias. Tenuate should not be administered to patients with severe hypertension. Insulin requirements in diabetes mellitus may be altered in association with the use of Tenuate and the concomitant dietary regimen. Tenuate may decrease the hypotensive effect of guanethidine. The least amount feasible should be prescribed or dispensed at one time in order to minimize the possibility of overdosage. Reports suggest that Tenuate may increase convulsions in some epileptics. Therefore, epileptics receiving Tenuate should be carefully monitored. Titration of dose or discontinuance of Tenuate may be necessary

ADVERSE REACTIONS: *Cardiovascular* Palpitation, tachycardia, elevation of blood pressure, precordial pain, arrhythmia. One published report described T-wave changes in the ECG of a healthy young male after ingestion of diethylpropion hydrochloride. *Central Nervous System.* Overstimulation, nervousness, restlessness, dizziness, jitteriness, insomnia, anxiety, euphoria, depression, dysphoria, tremor, dyskinesia, mydriasis, drowsiness, malaise, headache; rarely psychotic episodes at recommended doses. In a few epileptics an increase in convulsive episodes has been reported. *Gastrointestinal:* Dryness of the mouth, unpleasant taste, nausea, vomiting, abdominal discomfort, diarrhea, constipation, other gastrointestinal disturbances. *Allergic:* Urticaria, rash, ecchymosis, erythema. *Endocrine:* Impotence, changes in libido, gynecomastia, menstrual upset. *Hematopoietic System.* Bone marrow depression, agranulocytosis, leukopenia *Miscellaneous:* A variety of miscellaneous adverse reactions has been reported by physicians. These include complaints such as dyspnea, hair loss, muscle pain, dysuria, increased sweating, and polyuria.

DOSAGE AND ADMINISTRATION: Tenuate (diethylpropion hydrochloride): One 25 mg. tablet three times daily, one hour before meals, and in midevening if desired to overcome night hunger. Tenuate Dospan (diethylpropion hydrochloride) controlled-release. One 75 mg tablet daily, swallowed whole, in midmorning. Tenuate is not recommended for use in children under 12 years of age.

OVERDOSAGE: Manifestations of acute overdosage include restlessness, tremor, hyperreflexia, rapid respiration, confusion, assaultiveness, hallucinations, panic states. Fatigue and depression usually follow the central stimulation. Cardiovascular effects include arrhythmias, hypertension or hypotension and circulatory collapse. Gastrointestinal symptoms include nausea, vomiting, diarrhea, and abdominal cramps. Overdose of pharmacologically similar compounds has resulted in fatal poisoning, usually terminating in convulsions and coma. Management of acute Tenuate intoxication is largely symptomatic and includes lavage and sedation with a barbiturate. Experience with hemodialysis or peritoneal dialysis is inadequate to permit recommendation in this regard. Intravenous phentolamine (Regitine®) has been suggested on pharmacologic grounds for possible acute, severe hypertension, if this complicates Tenuate overdosage.

Product Information as of April, 1976

MERRELL-NATIONAL LABORATORIES Inc.
Cayey, Puerto Rico 00633
Direct Medical Inquiries to
MERRELL-NATIONAL LABORATORIES
Division of Richardson-Merrell Inc.
Cincinnati, Ohio 45215, U.S.A.

Licensor of Merrell®

References: 1. Citations available on request – Medical Research Department, MERRELL RESEARCH CENTER, MERRELL-NATIONAL LABORATORIES, Cincinnati, Ohio 45215 2. Hoekenga, M.T., O'Dillon, R H., and Leyland, H.M A Comprehensive Review of Diethylpropion Hydrochloride. International Symposium on Central Mechanisms of Anorectic Drugs, Florence, Italy, Jan. 20-21, 1977.

Merrell

8-3921 (Y587A)

Whether overweight is a complicating factor... or just uncomplicated overweight.

Tenuate® Dospan® Ⓒ IV
(diethylpropion hydrochloride NF)
75 mg. controlled-release tablets

A useful short-term adjunct in an indicated weight loss program.

Overweight patients in certain diagnostic categories often require strict obesity control. Diethylpropion hydrochloride has been reported useful in obese patients with hypertension, symptomatic cardiovascular disease, or diabetes. While it is not suggested that Tenuate in any way reduces these complications in the overweight, it may have a useful place as a short-term adjunct in a prescribed dietary regimen. (Tenuate should not be administered to patients with severe hypertension; see additional Warnings and Precautions on the opposite page.)

In uncomplicated obesity.

Many patients, on the other hand, present with excess fat but no disease. While this condition is often termed uncomplicated obesity, complications of both a social and a psychologic nature may be distressingly real for the patients. In these cases, a short-term regimen of Tenuate can help reinforce your dietary counsel during the important early weeks of an indicated weight loss program.

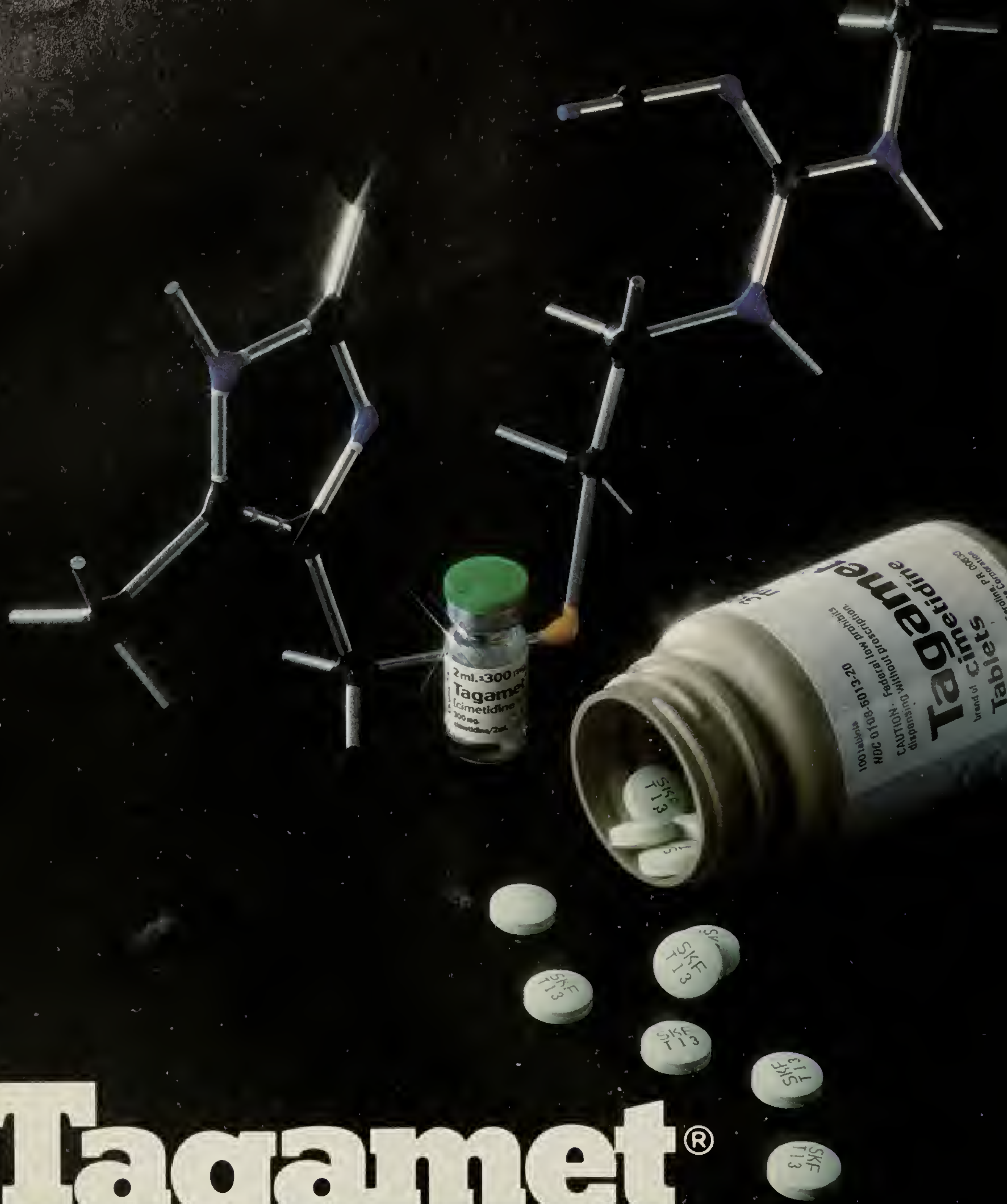
Clinical effectiveness.

The anorexic effectiveness of diethylpropion hydrochloride is well documented. No less than 16 separate double-blind, placebo-controlled studies attest to its usefulness in daily practice.[1] And the unique chemistry of Tenuate provides "...anorexic potency with minimal overt central nervous system or cardiovascular stimulation."[2] Compared with the amphetamines, diethylpropion has minimal potential for abuse.

**Tenuate–it makes sense.
And it's responsible medicine.**

Merrell

For prescribing information see opposite page


2 ml. 300 mg.
Tagamet
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Tablets
100 tablets
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Tagamet®
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How Supplied: Pale green, 300 mg. tablets in bottles of 100 and Single Unit Packages of 100 (intended for institutional use only).
Injection, 300 mg./2 ml., in single-dose vials in packages of 10.

SK&F LAB CO.
a SmithKline company

Lake Havasu. Contact: Lucile Bowden, Havasu. Contact: Lucile Bowden 838-0205 or Kay Wilde 264-0993.

Proposition 13 and Health Care: An Analysis of Impact
November 11-12, 1978, Sheraton-Palace Hotel, San Francisco, CA. Sponsor: University of California, San Francisco. Contact: Ms. Mae Ling Yee, Univ. of California, San Francisco Continuing Education in Health, 1308 Third Ave., San Francisco, CA 94143.

26th Annual Meeting of the Medical Society of the United States and Mexico
November 15-18, 1978. Guadalajara, Jalisco, Mexico. Contact: Mrs. Carolyn Parsons, Exec. Secy., 3161 N. Pantano Rd., Tucson, AZ 85715.

The Executive Physician Development Conference: Management in the Framework of Accounting & Finance
November 13-17, 1978. Arizona Inn, Tucson, AZ. Sponsor: U of A College of Medicine. Office of Continuing Medical Education and Outreach. Contact: Anthony F. Vuturo, M.D. Approved for 50 hours of category 1 credit.

DECEMBER

New Trends in Surgery: Arizona Chapter American College of Surgeons Annual Conference
December 1 & 2, 1978. Doubletree Inn, Scottsdale, AZ. Sponsor: Arizona Chapter of Surgeons. Contact: James J. Berens, M.D., 550 W. Thomas Rd., Phoenix, AZ 85013. Approved for 12 hours of category 1 credit.

7th Annual Seminar "Pulmonary Diseases - Part II"
December 9 & 10, 1978. Camelback Inn, Scottsdale, AZ. Sponsor: Maricopa County General Hospital. Contact: Alex Newman, M.D., Program Chairman, Dept. of Radiology, Maricopa County General Hospital, 2601 E. Roosevelt St., Phoenix, AZ 85008. Approved for 14 hours of category 1 credit.

1979
JANUARY

Critical Care of Neurological and Neurosurgical Emergencies
January 25-27, 1979. Camelback Inn, Phoenix, AZ. Sponsor: St. Joseph's Hospital and Medical Center, Barrow Neurological Institute. Contact: Richard A. Thompson, M.D., Chairman, 350 W. Thomas Rd., Phoenix, AZ 85013. Approved for category 1 credit.

Selected Horizons in Infection Diagnosis and Laboratory Management
January 27-28, 1979, Tucson Marriott Hotel, Tucson, AZ. Sponsors: Arizona Society of Pathologists and the American Society of Clinical Pathologists. Contact: Carol Turner, 810 W. Bethany Home Rd., Phoenix, AZ 85013. (602) 246-8901. Approved for 7 hours category 1 credit.

FEBRUARY

Selected Topics in Neuroradiology
February 7-9, 1979. San Diego, CA. Sponsor: San Diego Radiology Research & Education Foundation and the American College of Radiology. Contact: Mary J. Ryals, Radiology, P.O. Box 2305, La Jolla, CA 92038. (714) 453-7500, Ex. 3711. Approved for 22½ hours of category 1 credit.

16th Annual Meeting of the Federation of Western Societies of Neurological Science, Inc.
February 22-25, 1979. Mountain Shadows, Scottsdale, AZ. Contact: Larry Stern, M.D., Program Chairperson, U of A Dept. of Neurology, Tucson, AZ 85721.

Pediatric Update 1979
February 26 - March 1, 1979. Scottsdale Sheraton Inn, Scottsdale, AZ. Sponsor: St. Joseph's Hospital & Medical Center, Phoenix, AZ. Contact: Tracy L. Trotter, M.D., Dept. of Pediatric Education, St. Joseph's Hospital & Medical Center, 350 West Thomas Rd., Phoenix, AZ 85013. Approved for 16 hours of category 1 credit.

Second Annual Postgraduate Course in OB/GYN
February 14-16, 1979, Scottsdale Hilton Hotel, Scottsdale, AZ. Sponsors: Phoenix OB/GYN Society and Dept. of OB/GYN Maricopa County General Hospital. Contact: Secretary, Phoenix OB/GYN Society, 333 E. Virginia, Ste. 222, Phoenix, AZ 85004, (602) 257-0736. Approved for category 1 credit.

MARCH

New Mexico Metabolism Symposium
March 8, 9, & 10, 1979, Taos, New Mexico. Contact: Office of Education, Lovelace Medical Center, Albuquerque, New Mexico. (505) 842-7353.

MONTHLY OR WEEKLY

Headache Rounds
Tuesday afternoons or Thursday mornings weekly. Sponsor: Headache Group of the Southwest. Contact: Peggy Voigt, 2610 W. Bethany Home Rd., Phoenix, AZ 85017, or phone 242-6646.

Shrine Medics Meeting
Second Tuesday of each month, Doctors Hospital, 5:45 p.m., J. South Classroom. Sponsor: Shrine Medics. Contact: Robert C. Briggs, M.D., 5121 N. Central Ave., Phoenix, AZ 85012.

Office Psychiatry for the Primary Provider
2nd Monday of month, 4811 N. 7th Street, Phoenix, AZ. Sponsor: Arizona Health Plan. Contact: T.R. Bittker, M.D., Box 5000, Phoenix, AZ 85010. Approved for category 1 credit.

Counter Transference Group
Weekly, Thurs. 8-10 p.m. Sponsor: Phoenix Psychiatric Council. Contact: James E. Campbell, M.D., 5051 N. 34th St., Phoenix, AZ 85018. Approved for 2 hours category 1 credit.

Monthly Meeting of Tucson Radiologists
Last Tues. of month. Plaza International, Tucson, AZ. Sponsor: U of A Medical Center, Dept. of Radiology. Contact: Irwin M. Freundlich, M.D., Arizona Medical Center, Dept. of Radiology, Tucson AZ 85724. Approved for 2 hours category 1 credit.

Pediatric Grand Rounds
Tuesday 7:30-8:30 a.m. in Phoenix: 1st Tues.—Phoenix Indian Hospital, 2nd Tues.—Maricopa County Hospital, 3rd Tues.—Good Samaritan Hospital, 4th Tues.—St. Joseph's Hospital. Sponsor: Maricopa County Hospital (Phoenix Hospital's Affiliated Pediatric Program). Contact: J. Kipp Charlton, M.D., 2601 E. Roosevelt, Phoenix, AZ 85008. Approved for 1 hour per session category 1 credit.

Review of Forensic Pathology, Current Case, Special Topics
Thursday, weekly, 11 a.m., 120 S. 6th Ave., Phoenix, AZ. Sponsor: Arizona Society of Pathologists. Contact: H.H. Karnitschnig, M.D., 120 S. 6th Ave., Phoenix, AZ. Approved for 1 hour per session category 1 credit.

Staff Education Conference
Wednesdays, weekly, 1 p.m., Arizona State Hospital, Phoenix, AZ. Sponsor: Arizona State Hospital. Contact: Howard E. Wulsin, M.D., Arizona State Hospital, 2500 E. Van Buren, Phoenix, AZ 85008. Approved for 1 hour per session category 1 credit.

BARROW NEUROLOGICAL INSTITUTE

Medical Education
Barrow Neurological Institute of St. Joseph's Hospital and Medical Center, 350 W. Thomas Road, Phoenix, AZ 85013.

Sponsor: St. Joseph's Hospital & Medical Center. Contact: John R. Green, M.D. Approved for 1 hour category 1 credit.

Neurology Teaching Conference
Tuesdays, 8:30-9:30 a.m., Eighth Floor Conf. Room.

Neurosurgery Morbidity Conference
Wednesdays, 8:15-9:15 a.m., on first and third weeks, Eighth Floor Conference Room.

Neuro-ophthalmology Conference
Tuesdays, 11:30 a.m. in neuropathology conference room.

Spinal Injury Conference
Wednesdays, 8:15-9:15 a.m., on ~~second~~ and fourth weeks, in Neuropathology Conf. Room—a multidisciplinary review of admission by neurosurgeons, orthopedists, and rehabilitation specialists.

Neuropathology of Gross Specimens Conference
Thursdays, 7:30-8:30 a.m. in the Morgue.

Neurology-Neurosurgical Clinical-Neuroradiological and Neuropathological Conference
Fridays, 8-9 a.m., First Floor Conference Room.

Neuropathology or Neuroradiology Conferences
Fridays, 9 a.m., Neuropathology in Neuropathology Conference Room, Neuroradiology in First Floor Conference Room.

Neurorehabilitation Conference
Tuesdays, noon, 8th Floor Conference Room.

Neurosurgical Journal Club
Saturdays, 9-11 a.m., in Eighth Floor Conference Room.

CAMELBACK HOSPITAL

5055 N. 34th St., Phoenix, AZ 85018. Sponsor: Camelback Hospital. Contact: Medical Director.

Patient Staffing Conference
Three times weekly.

DESERT SAMARITAN HOSPITAL

Wednesday evenings, 7 p.m. Sponsor: Desert Samaritan Hospital. Contact: L.A. Rosati, M.D., Laboratory, Desert Samaritan Hospital, Mesa, AZ 85202. Approved for category 1 credit.

GOOD SAMARITAN HOSPITAL

Clinical Cancer Conference
3rd Wednesday, every month, Butler Bldg. Conference Room, Good Samaritan Hospital. Contact: John A. Bruner, M.D., 926 E. McDowell Road, Phoenix, AZ 85006. Approved for 1 hour per session category 1 credit.

Pulmonary Disease Grand Rounds
Mondays, 12 Noon, D-5 North Conference Room, Good Samaritan Hospital, Phoenix, AZ. Sponsor: Pulmonary Disease Teaching Service, Good Samaritan Hospital. Contact: Bernard E. Levine, M.D., Pulmonary Function Laboratory, Good Samaritan Hospital, 1033 E. McDowell Road, Phoenix, AZ 85006. Approved for 1 hour category 1 credit.

MARYVALE SAMARITAN HOSPITAL

Continuing Medical Education Program
Maryvale Samaritan Hospital, every other Wednesday, 7-8 a.m., January 25, 1978 through December 27, 1978. Sponsor: Medical Staff of Maryvale Hospital. Contact: Richard C. Christensen, M.D. Approved for 1 hour per session category 1 credit.

MARICOPA COUNTY GENERAL HOSPITAL

2601 E. Roosevelt, Phoenix, AZ 85008. Sponsor: Maricopa County General Hospital. Contact: H.F. Lenhardt, M.D., Dir. of Medical Education. Approved for category 1 credit.

Total Joint Replacement
Oct. 27 & 28, 1978. Maricopa County General Hospital.

7th Annual Radiology Seminar "Pulmonary Diseases Part II"
Dec. 9 & 10, 1978, Camelback Inn, Scottsdale, AZ 85253.

Recent Advances in Geriatric Psychiatry
January 20, 1979. Maricopa County General Hospital.

5th Annual MCGH Urological Seminar
January 27 & 28, 1979. Doubletree Inn, Scottsdale, AZ 85251.

Current Advances in Obstetrics and Gynecology
Feb. 14, 15 & 16, 1979, Scottsdale Hilton Hotel, Scottsdale, AZ.

Medical Progress: A Review of Advances in Medicine in the Past 5 Years
Feb. 22, 23 & 24, 1979. Carefree Inn, Carefree, AZ 85331.

The Head presented by Department of Radiology, Feb. 9, 10 & 11, 1979. Doubletree Inn, Scottsdale, AZ 85251.

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1201 S. 7th Ave., Phoenix, AZ 85036. Sponsor: Memorial Hospital. Approved for category 1 credit.

Monthly Medical Education Seminar
Third Monday, 6:30 p.m., Kiva Conference Room. Contact: George Scharf, M.D.

Tumor Board Conference
Every Friday at Noon, Kiva Conference Room. Contact: Howard Kimball, M.D.

SCOTTSDALE MEMORIAL HOSPITAL

7300 E. 4th St., Scottsdale, AZ 85251. Sponsor: Scottsdale Memorial Hospital. Contact: W.S. Williams, M.D., Director of Medical Education.

Clinical Pathological Conference
4th Monday, monthly, 12:45 p.m.

Family Practice Conference
1st Monday, monthly, 12:45 p.m.

Medical Grand Rounds
3rd Monday, monthly, 12:45 p.m.

Morbidity & Mortality Conference
2nd Monday, monthly, 12:45 p.m.

ST. MARY'S HOSPITAL & HEALTH CENTER

1601 West St. Mary's Rd., Tucson, AZ 85703. Sponsor: St. Mary's Hospital & Health Center. Contact: see below.

Cardiology Conference
Every Friday 8-9 a.m., Century Room A. Contact: Anthony L. Forte, M.D.

Monthly Specialty Conference of the Department of Surgery
First Monday, monthly, 7:30 a.m., Century Room A. Contact: Medical Staff Office. Approved for 1 hour of category 1 credit.

Grand Rounds: Medical, Surgical, Family Practice, Pathology, Radiology
Weekly, Thursday, 7-8:30 a.m. Contact: Richard A. Silver, M.D. Approved for 1 hour category 1 credit.

U OF A HEALTH SCIENCES CENTER

Tucson, AZ 85724. Sponsor: U of A

College of Medicine. Contact: See below. Approved for category 1 credit.

Clinical Immunology, Allergy & Rheumatology Rounds
Every Friday, Noon-1 p.m. Contact: John Boyer, M.D., Dept. of Internal Medicine.

Cerebrovascular Disease Conference
Mondays, 5-6 p.m., weekly, Room 5505. Contact: Wesley Moore, M.D., Depts. of Surgery, Neurology & Radiology.

Dean's Clinical Rounds
October 18, 1978, Main Auditorium, UAHSC. Contact: Louis J. Kettel, M.D.

Endocrinology Seminar
Every Thursday, Noon-1 p.m., 1st, 3rd & 5th Thursday, Room N318, VA Hospital. 2nd & 4th Thursday, Room 6505, Tucson Medical Center. Contact: Dept. of Internal Medicine.

Hematology-Oncology Clinical Conference
Every Tuesday, Noon-1 p.m., 1st, 3rd & 5th Tuesdays, Room 6505, Tucson Medical Center. 2nd & 4th Tuesdays, Room N318, VA Hospital. Contact: Sidney Salmon, M.D., Dept. of Internal Medicine.

Joint Thyroid Clinic Conference
1st & 3rd Wednesdays of every month. AHSC, Rm. 6505. Contact: Sidney Werner, M.D., Dept. of Internal Medicine/ Endocrinology Section.

Medical Grand Rounds
Every Wed., Noon-1 p.m., 1st, 3rd & 5th Wed., Staff Conf. Room, VA Hospital. 2nd & 4th Wed., Room 5403, UAHSC. Contact: Jay Smith, M.D., Dept of Internal Medicine.

Nuclear Medicine
Thursday, 7:30 a.m., Radiology Conf. Room, UAHSC. Contact: Irwin M. Freundlich, M.D., Dept of Diagnostic Radiology.

Neurology Grand Rounds
Every Friday, Noon, 1st, 3rd & 5th Fridays, UAHSC, Room 7505. 2nd & 4th Fridays, VA Hospital. Contact: William A. Sibley, M.D., Dept. of Neurology.

Neuropathology Review Conference
Thursdays, 8:30 a.m., Room 5120, UAHSC. Contact: Peter C. Johnson, M.D.

Neurosciences Seminar
Every Friday, 7:30 a.m., UAHSC, Room 7505. Contact: Colin R. Bamford, M.D., or Jose F. Laguna, M.D., Dept. of Neurology.

Pathology Seminar
Friday, 4:30-5:30 p.m., Room 5120, UAHSC. Contact: Kenneth Ryan, M.D., Dept. of Pathology.

Tucson Pathologist Conference
First Monday of the month, 7:30-9 p.m. Rotation between Tucson Pathology Conf Rooms. Contact: Merel Clard, M.D., Tucson Pathologists.

Pediatric Grand Rounds
Every Tuesday, 12:30-1:30 p.m. Alternates between Tucson Medical Center & UAHSC. Contact: Hugh Thompson, M.D., Dept. of Pediatrics.

Problem Case Workshop
3rd Monday of each month, 7:30 a.m., Room 4410, UAHSC. Contact: H.E. Cross, M.D., Ph.D., Div. of Ophthalmology.

Psychiatric Grand Rounds
Every Wednesday, Sept. to May 4, 5:30 p.m., Room 8403 UAHSC. Contact: Alan Levenson, M.D., Dept. of Psychiatry.

Chest Radiology
Monday, 5-6 p.m., weekly, Room 1535F, UAHSC. Contact: Irwin M. Freundlich, M.D., Dept. of Radiology.

Gastrointestinal Radiology
Mondays, 7:30 a.m., weekly except for summer months. Contact: Irwin M. Freundlich, M.D., Dept. of Radiology.

Radiation Oncology Planning Conference
Friday, weekly, 8:30-10 a.m., UAHSC, Room 0655. Contact: Robert S. Heusinkveld, M.D., Radiation Oncology Section.

Radiology-Rheumatology Conference
Thursday, 8 a.m., UAHSC, Library Room 1535C. Contact: Irwin M. Freundlich, M.D., Dept. of Radiology.

Vascular Radiology
January-June 1978, 7:30 -8:30 a.m., every Friday. Contact: Irwin M. Freundlich, M.D., Dept. of Radiology.

Radiology Interesting Case Conference
Thursday, Noon, VA Hospital. Contact: Irwin M. Freundlich, M.D., Dept. of Radiology.

Resident's Conference
Wednesday, weekly 5-6 p.m., Diag. Radiology Conf. Room. Contact: Irwin M. Freundlich, M.D., Dept of Radiology.

Trauma Conference
Every Thursday, 4-5 p.m. UAHSC, Room 5505. Contact: Martin Silverstein, M.D., Dept. of Surgery.

Grand Ward Rounds—Trauma
Every Tuesday, 8 a.m., UAHSC. Contact: Martin Silverstein, Surgery Dept., Trauma Section.

Monthly Meeting Tucson Ultrasonography Group
First Wednesday of month, 4:30-5:30 p.m., UAHSC. Contact: Irwin M. Freundlich, M.D.

Tucson Urological Society Scientific Meeting
Monthly. Contact: George W. Drach, M.D., Depts of Surgery & Urology.

General Urology Conference
Tuesday, 5-6 p.m. Thursday, Noon-1:30 p.m., UAHSC Meeting Rooms & VA Hospital. Contact: George W. Drach, M.D., Dept. of Surgery/Urology Section.

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7th Street and Indian School Rd., Phoenix, AZ 85012. Sponsor: VA Hospital. Contact: Jasper L. McPhail, M.D. Approved for category 1 credit.

Academic Surgery Conference
Each Thursday — 2 p.m. — C435
Dr. Cannon, Ext. 493.

Cancer Symposium
Each Wednesday — 1 p.m. — T5
Dr. Berkley, Ext. 419.

Cardiology Conference
2nd Thursday — 1 p.m. — T5
Dr. Habibzadeh, Ext. 348.

Clinical Conference
4th Thursday of 3rd Month
(Mar., Jun., Sept., & Dec.)
1 p.m. — T5
Dr. Likos, Ext. 623.

Dermatology Conference
1st, 2nd, & 3rd Wednesday
(usually, but is subject to change)
10 a.m. — C118
Dr. Roberts, Ext. 426.

G.I. Radiology Clinical Correlation Conference
1st & 3rd Monday — 1 p.m. — C435
Dr. Sanowski, Ext. 618.

G.I. Grand Rounds
Each Tuesday — 1 p.m. — T5
(4th Thursday with U of A Consultants)
Dr. Sanowski, Ext. 618.

Medical Service Grand Rounds
Each Friday — 11 a.m. — T5
Dr. Zeller, Ext. 272.

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1st & 3rd Friday — 2 p.m. — 2128
Dr. Sanowski, Ext. 618.

Surgery-Pathology Conference
Each Thursday — 7 a.m. — 2128
Dr. Cannon, Ext. 493, &
Dr. Likos, Ext. 623.

Urology-Pathology Conference
Each Wednesday — 7 a.m. — 2128
Dr. Likos, Ext. 623, &
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American Medical Association

Continued from page 679

AT THE DISCRETION OF THE CHAIRMAN OF THE PROFESSIONAL COMMITTEE, FUNDS OF THAT COMMITTEE BE USED TO SPONSOR ONE ATTENDEE AT THE COURSE ON RADIATION HANDLING AT OAK RIDGE, WITH THE STIPULATION THAT, UPON RETURNING FROM SUCH COURSE, THE ATTENDEES HOLD A SEMINAR TO INFORM ALL MEMBERS REGARDING INFORMATION OBTAINED.

CERTIFICATE OF NEED

Blue Cross/Blue Shield letter of 8/9/78. RECEIVED.

ALL AMERICAN MEDICAL HALL OF FAME

Discussion was held regarding the memorandum dated July 15, 1978, from the St. Louis Medical Society and the development of an All American Medical Hall of Fame.

IT WAS MOVED AND CARRIED THAT WE PURSUE FURTHER INFORMATION BY COMPLETING THE PRELIMINARY REPORT FORM IN THE FOLLOWING PARTICULARS: (1) DESIGNATING A REPRESENTATIVE TO RECEIVE FURTHER INFORMATION AND (2) DESIGNATING AN ASSOCIATION STAFF MEMBER TO ALSO RECEIVE FURTHER INFORMATION.

CANADIAN HEALTH CARE SYSTEM SEMINAR

AMA's letter of July 17, 1978, together with the informative material and the invitation to participate in the Canadian Health Care System Seminar was discussed. RECEIVED.

ARIZONA CIVIL LIBERTIES UNION

Dr. Crisp reported that the letter of Nancy Hicks as presented to the committee had, in fact, been responded to during the past week and no follow-up communication had been received from Ms. Hicks. RECEIVED.

ARIZONA VOLUNTARY COST CONTAINMENT PROGRAM

ArHA's request for ArMA's endorsement of the Arizona Voluntary Cost Containment Program was considered by the committee.

IT WAS MOVED AND CARRIED TO ENDORSE THE CONCEPT OF AN ARIZONA VOLUNTARY COST CONTAINMENT PROGRAM.

MALPRACTICE INSURANCE CRISIS COMMITTEE

Discussion of this matter and the chairman's letter of 8/1/78 was deferred to be taken up at executive session, with counsel present, immediately following adjournment of committee meeting.

AD HOC COMMITTEE ECONOMIC ORGANIZATION FOR ARIZONA PHYSICIANS

Names were submitted to the committee for appointment to an Ad Hoc Committee on an Economic Organization for Arizona Physicians.

IT WAS MOVED AND CARRIED THAT THE PERSONS LISTED BELOW BE APPOINTED TO THE AD HOC COMMITTEE ON AN ECONOMIC ORGANIZATION FOR ARIZONA PHYSICIANS, WITH ALFRED F. MILLER, M.D., AS CHAIRMAN.

BURKHARDT, BOYD R., M.D.
COLLINS, RICHARD L., M.D.
FELDSTEIN, MURRAY S., M.D.
MILLER, ALFRED F., M.D.
NEEL, DANIEL L., M.D.
PUCELIK, JAMES S., M.D.
ROSENBLATT, ALBERT, M.D.
SWITZER, RICHARD W., M.D.
WARD, NEIL O., M.D.

WESTERN PHYSICIANS PURCHASING ASSOCIATION

Dr. Kahle reported on the organizational meeting of Western Physicians Purchasing Association, of which he was elected president. The association at the present time involves five states and potentially 9,300 physicians. The first Executive Committee meeting will be in September, at which time a Chief Executive will be hired to generally manage the affairs of the association.

CORRESPONDENCE

AMA's mailgram indicating that we have exceeded last year's membership was received.

OTHER BUSINESS

Governor's Meeting.

Meeting with Governor Babbitt scheduled for 8/21/78 was briefly discussed for informational purposes.

Arizona Perinatal Program.

Bruce Robinson informed the meeting that Harold D. Gabel, M.D., had replaced Dr. Moore AS Executive Director of the Arizona Perinatal Program and it was agreed that an invitation would be extended to him to attend the September Board of Directors meeting.

State Health Legislation Meeting.

The committee was advised that September 28-30 there would be an AMA supported State Health Legislation meeting to be held in Colorado Springs regarding impact on state legislators, etc., and it was determined that the informative material be circulated to the Legislative Committee chairman.

Meeting adjourned to executive session at 8:08 p.m.

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continued from page 673
Controversies
Dr. Zonis

obstruction) is controversial at best. Such cases must be judged on an individual basis and should benefit most from the combined efforts of all disciplines involved. In general, removal of tonsils and/or adenoids in these conditions has not been helpful.

Many clinical studies have been done in an effort to resolve the controversy relative to T & A. All have been subjected to criticism by those with strong feelings on one side or the other. Prospective studies are now going on. They may give us some answers in the next five to ten years or may still conclude that "further study is needed." In the meantime, it is hoped that the emotionalism surrounding this controversy may be supplanted by common sense and careful clinical judgment based on past experiences and sound physiologic principles.

REFERENCES

1. Kaiser, A.D.: Results of Tonsillectomy. A Comparative Study of 2200 Tonsillectomized Children With an Equal Number of Controls Three and Ten Years After the Operation. JAMA 95: 837, 1930.
2. Goode, R.L. & Coursey, D.L.: Tonsillectomy and Infectious Mononucleosis — A Possible Relationship. Laryngoscope 86: 992, 1976.
3. Workshop on Tonsillectomy & Adenoidectomy. Ann. Otol. 84: supplement, 1975.
4. Paradise, J.L.; Bluestone, C.D.; Bachman, R.Z.; Karantonis, G.; Smith, I.H.; Saez, C.A.; Colborn, D.K.; Bernard, B.S.; Taylor, F.H.; Schwarzbach, R.H.; Felder, H.; Stool, S.E.; Fitz, A.M. & Rogers, K.D. History of Recurrent Sore Throat as an Indication for Tonsillectomy. N.E.J.M. 298: 409, 1978.
5. Haggerty, R.J. Sore Throats and Tonsillectomy. N.E.J.M. 298: 453, 1978.

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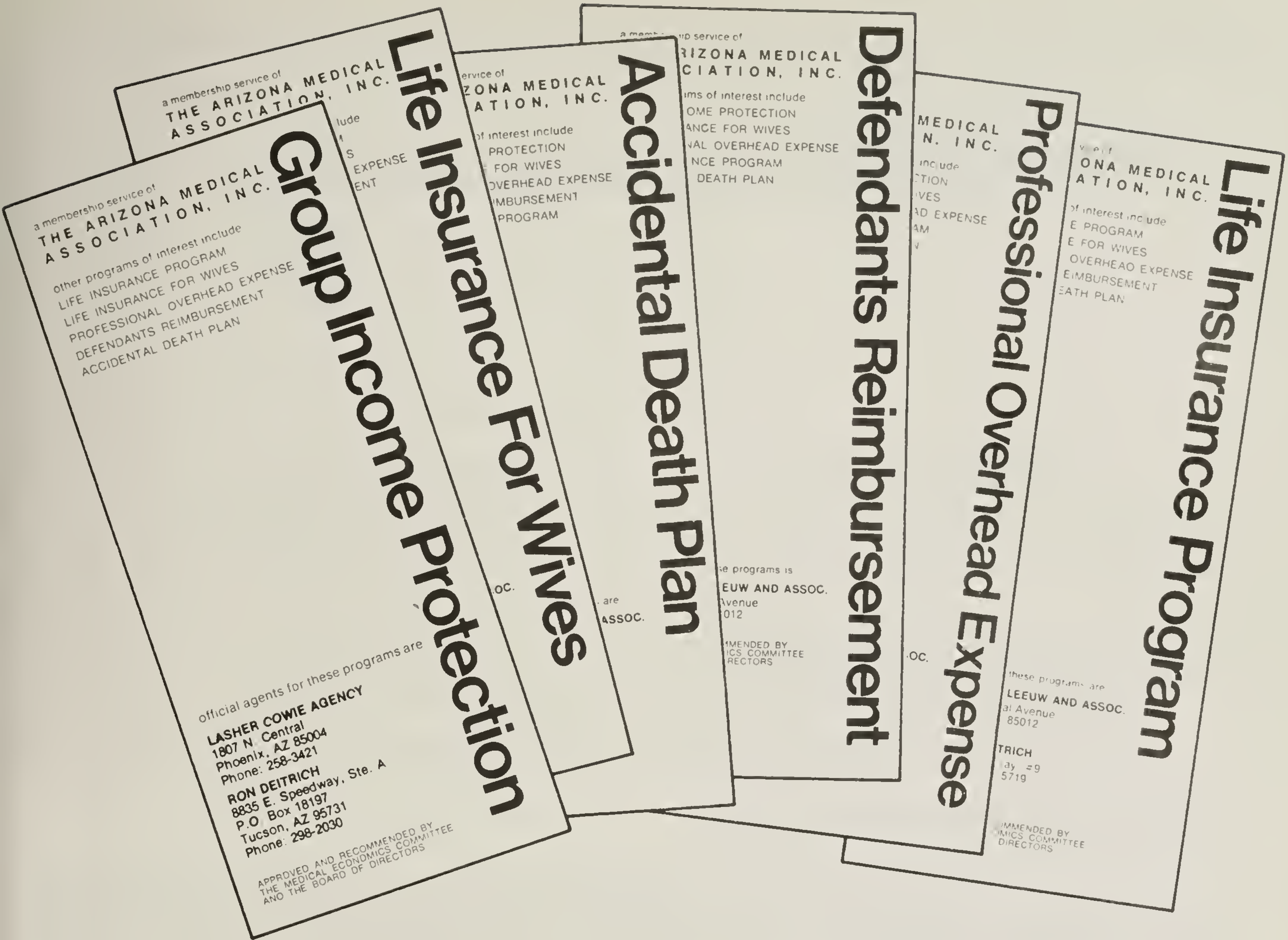

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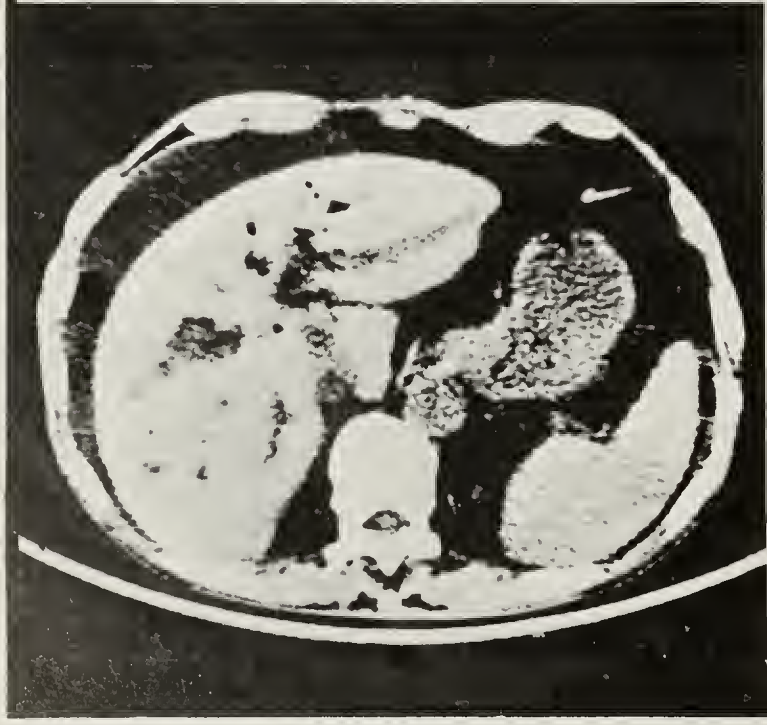

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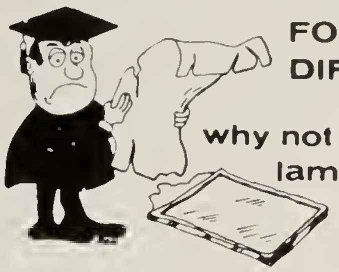

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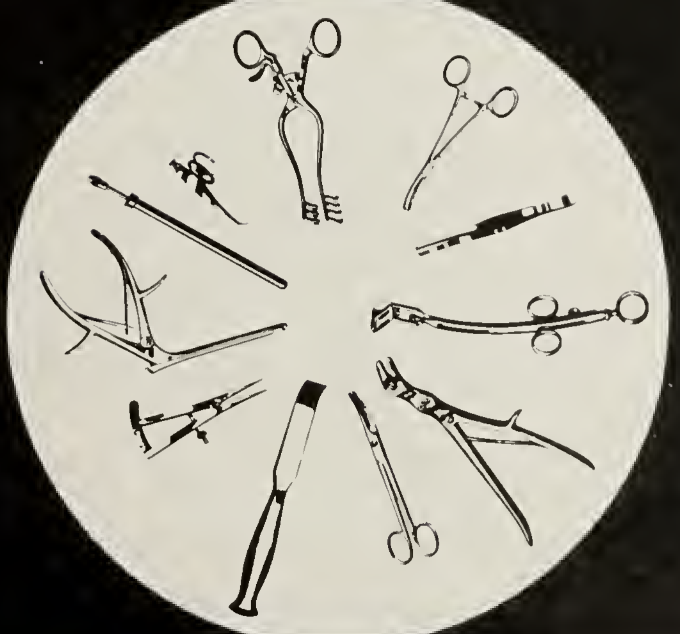

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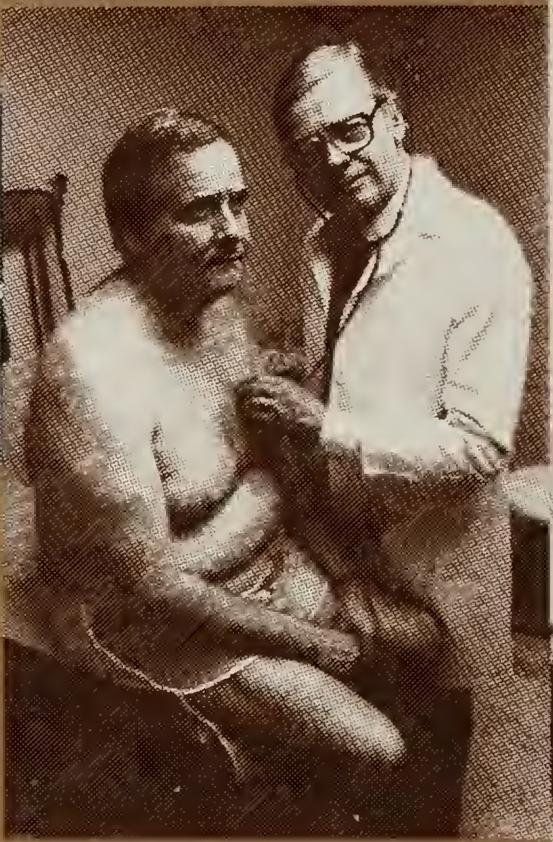

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☐ Proven antianxiety performance

☐ Minimal effect on mental acuity

☐ Predictable patient response

☐ Is used concomitantly with primary medications, such as anticholinergics and cardiovascular drugs

Librium® Ⓒⅳ

chlordiazepoxide HCl/Roche

5mg, 10mg, 25mg capsules

synonymous with relief of anxiety

Please see next page for summary of product information.

Librium® 5mg, 10mg, 25mg capsules
chlordiazepoxide HCl/Roche

Before prescribing, please consult complete product information, a summary of which follows:

Indications: Relief of anxiety and tension occurring alone or accompanying various disease states. Efficacy beyond four months not established by systematic clinical studies. Periodic reassessment of therapy recommended

Contraindications: Patients with known hypersensitivity to the drug

Warnings: Warn patients that mental and/or physical abilities required for tasks such as driving or operating machinery may be impaired, as may be mental alertness in children, and that concomitant use with alcohol or CNS depressants may have an additive effect. Though physical and psychological dependence have rarely been reported on recommended doses, use caution in administering to addiction-prone individuals or those who might increase dosage; withdrawal symptoms (including convulsions), following discontinuation of the drug and similar to those seen with barbiturates, have been reported

***Usage in Pregnancy:* Use of minor tranquilizers during first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.**

Precautions: In the elderly and debilitated, and in children over six, limit to smallest effective dosage (initially 10 mg or less per day) to preclude ataxia or oversedation, increasing gradually as needed and tolerated. Not recommended in children under six. Though generally not recommended, if combination therapy with other psychotropics seems indicated, carefully consider individual pharmacologic effects, particularly in use of potentiating drugs such as MAO inhibitors and phenothiazines. Observe usual precautions in presence of impaired renal or hepatic function. Paradoxical reactions (e g , excitement, stimulation and acute rage) have been reported in psychiatric patients and hyperactive aggressive children. Employ usual precautions in treatment of anxiety states with evidence of impending depression; suicidal tendencies may be present and protective measures necessary. Variable effects on blood coagulation have been reported very rarely in patients receiving the drug and oral anticoagulants; causal relationship has not been established clinically

Adverse Reactions: Drowsiness, ataxia and confusion may occur, especially in the elderly and debilitated. These are reversible in most instances by proper dosage adjustment, but are also occasionally observed at the lower dosage ranges. In a few instances syncope has been reported. Also encountered are isolated instances of skin eruptions, edema, minor menstrual irregularities, nausea and constipation, extrapyramidal symptoms, increased and decreased libido—all infrequent and generally controlled with dosage reduction; changes in EEG patterns (low-voltage fast activity) may appear during and after treatment; blood dyscrasias (including agranulocytosis), jaundice and hepatic dysfunction have been reported occasionally, making periodic blood counts and liver function tests advisable during protracted therapy

Usual Daily Dosage: Individualize for maximum beneficial effects. *Oral–Adults:* Mild and moderate anxiety and tension, 5 or 10 mg *t.i.d.* or *q.i.d.*; severe states, 20 or 25 mg *t.i.d.* or *q.i.d.* *Geriatric patients:* 5 mg *b.i.d.* to *q.i.d.* (See Precautions.)

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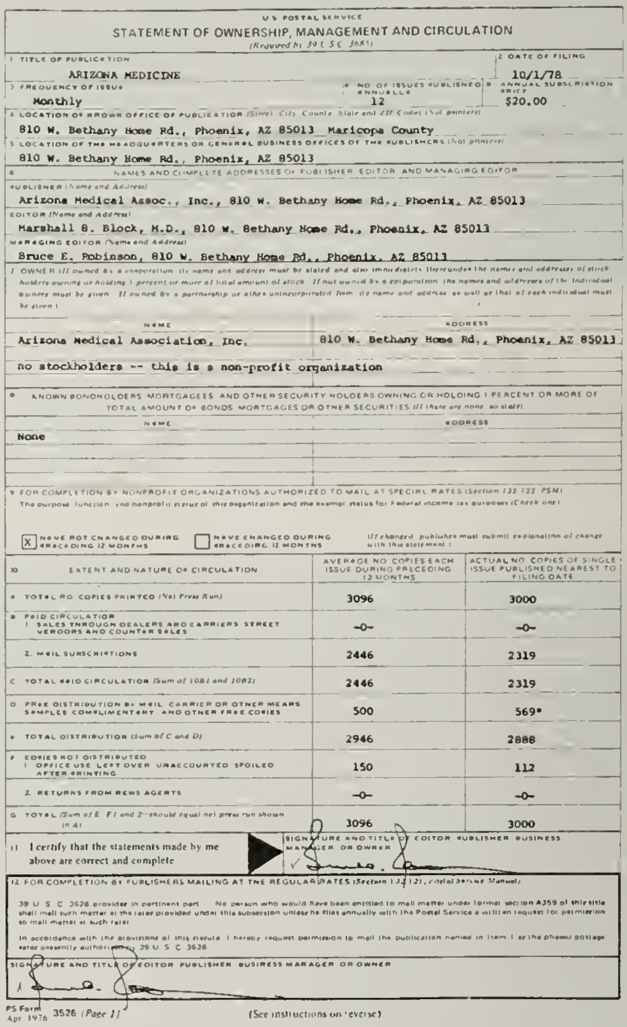

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Apr. 1976
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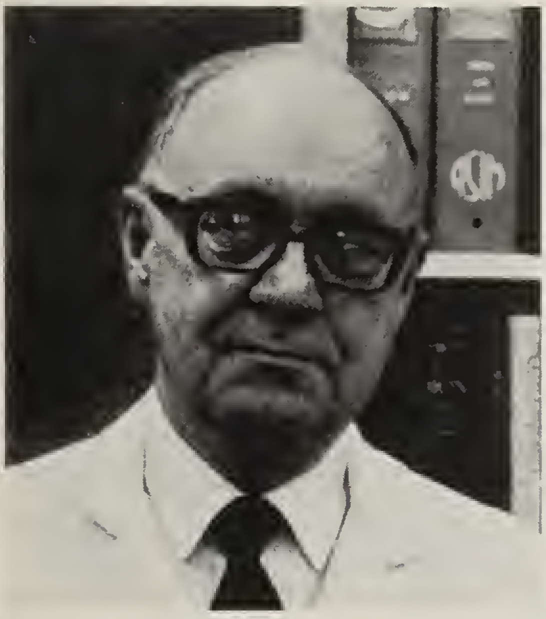

More and more physicians today are beginning to realize the extent of the economic influence they have, and are finding ways of holding costs down.

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**PATIENT CARE Magazine—Outlook 1977, "Face-Off: Cost Containment vs. Chaos," January 1, 1977.*

Lyle CB, et al. "Practice habits in a group of eight internists," ANNALS OF INTERNAL MEDICINE 84 (May 1976), 594-601.

Schroeder SA, et al. "Use of laboratory tests and pharmaceuticals: variation among physicians and effect of cost audit on subsequent use," JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION 225 (Aug. 20, 1973), 969-73.

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But green apples don't necessarily have anything to do with this common problem. No matter what it's called now, irritable colon and functional diarrhea are still very much a part of the everyday scene. Fortunately, so is Trocinate (thiphenamil HCl).

Trocinate acts rapidly to relieve the misery of smooth muscle spasm, and arrest acute functional diarrhea.* Effective blood levels can be achieved with Trocinate often within 30 minutes. And when effective, as little as two to four doses will bring relief.

One 400 mg tablet every four hours works for acute episodes. And once relief is achieved, it usually can be maintained with a reduction in dosage, utilizing the 100 mg tablets. Additionally, Trocinate is **not** an anticholinergic; a particularly significant benefit for patients with glaucoma.

So in your next few patients suffering the pain and embarrassment of functional diarrhea and smooth muscle spasm, consider a clinical trial with Trocinate. It means prompt relief for your "quick stepping" patients...even when there are no apples involved.

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ACTIONS:
Trocinate is a potent antispasmodic and smooth muscle relaxant that acts like papaverine on smooth muscle. Trocinate exerts a strong local anesthetic effect on contact with mucous membranes.

INDICATIONS*
Trocinate is indicated for relief of smooth muscle spasm.

In Gastroenterology: for relief of pain and discomfort due to smooth muscle spasm associated with spastic colitis, irritable colon, mucous colitis, acute enterocolitis, and functional gastrointestinal disorders.

LIMITATIONS OF EFFECTIVENESS
On the basis of the opinions of the National Academy of Science and National Research Council Committees and other information, the Food and Drug Administration considers this drug to be limited in its effectiveness, as follows:

Probably effective, as follows: May be useful in the irritable bowel syndrome (irritable colon, spastic colon, mucous colitis, acute enterocolitis, and functional gastrointestinal disorders); and in neurogenic bowel disturbances (including the splenic flexure syndrome and neurogenic colon). To be effective the dosage must be titrated to the individual patient's needs.

CONTRAINDICATIONS:
Trocinate is contraindicated in obstructive uropathy (for example, bladder neck obstruction due to prostatic hypertrophy); obstructive disease of the gastrointestinal tract (as in achalasia, paralytic ileus, pyloroduodenal stenosis, etc.); intestinal atony of elderly or debilitated patient; severe ulcerative colitis; toxic megacolon complicating ulcerative colitis; myasthenia gravis.

WARNINGS:
Use in Pregnancy—The safety of the use of Trocinate during pregnancy has not been established.

Diarrhea may be an early symptom of incomplete intestinal obstruction, especially in patients with ileostomy or colostomy. In this instance treatment with this drug may be inappropriate and possibly harmful.

DOSAGE AND ADMINISTRATION:
Adult: Initially, 400 milligrams. May be repeated four hours later. Trocinate acts very promptly and, when effective, relieves discomfort with two to four doses. Relief may usually be maintained with reduced frequency of dosage.

The safety and efficacy of Trocinate in children has not been determined, and Trocinate should not be administered to children.

MANAGEMENT AND OVERDOSAGE:
In twenty years of usage of Trocinate, side-effects have been so very infrequent that no typical symptoms and physical signs of overdosage have become known. Consequently, any untoward symptoms or physical signs should be counteracted by appropriate palliative therapy.

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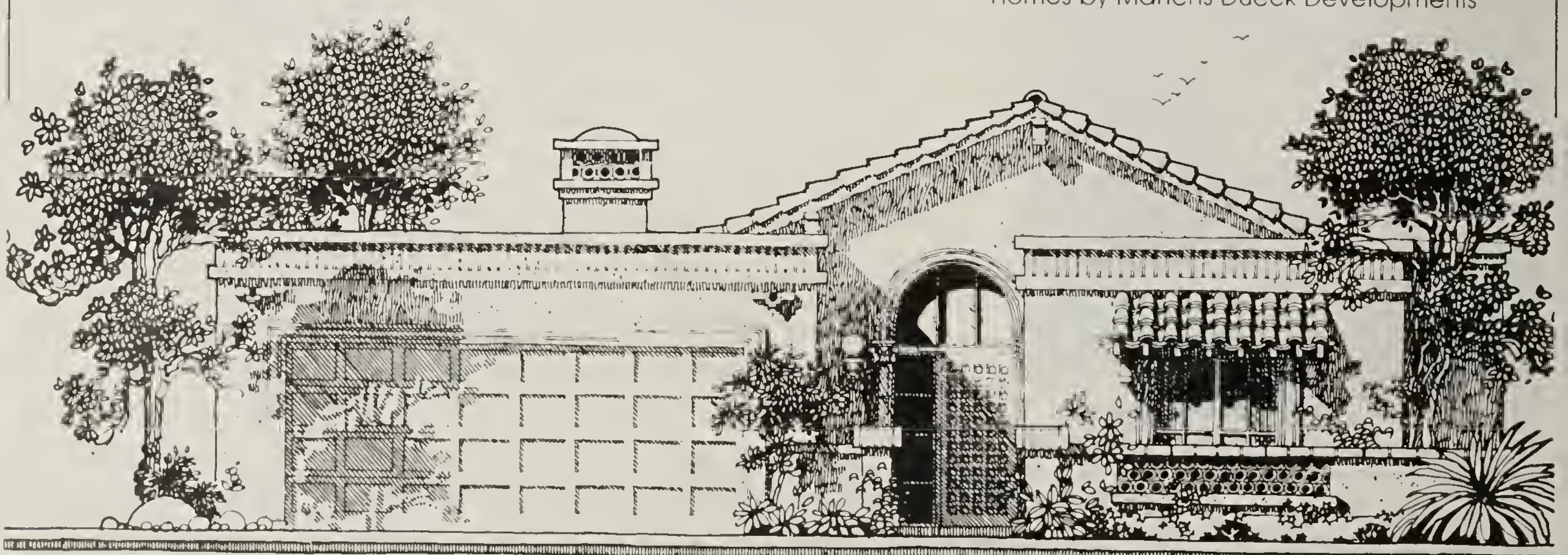

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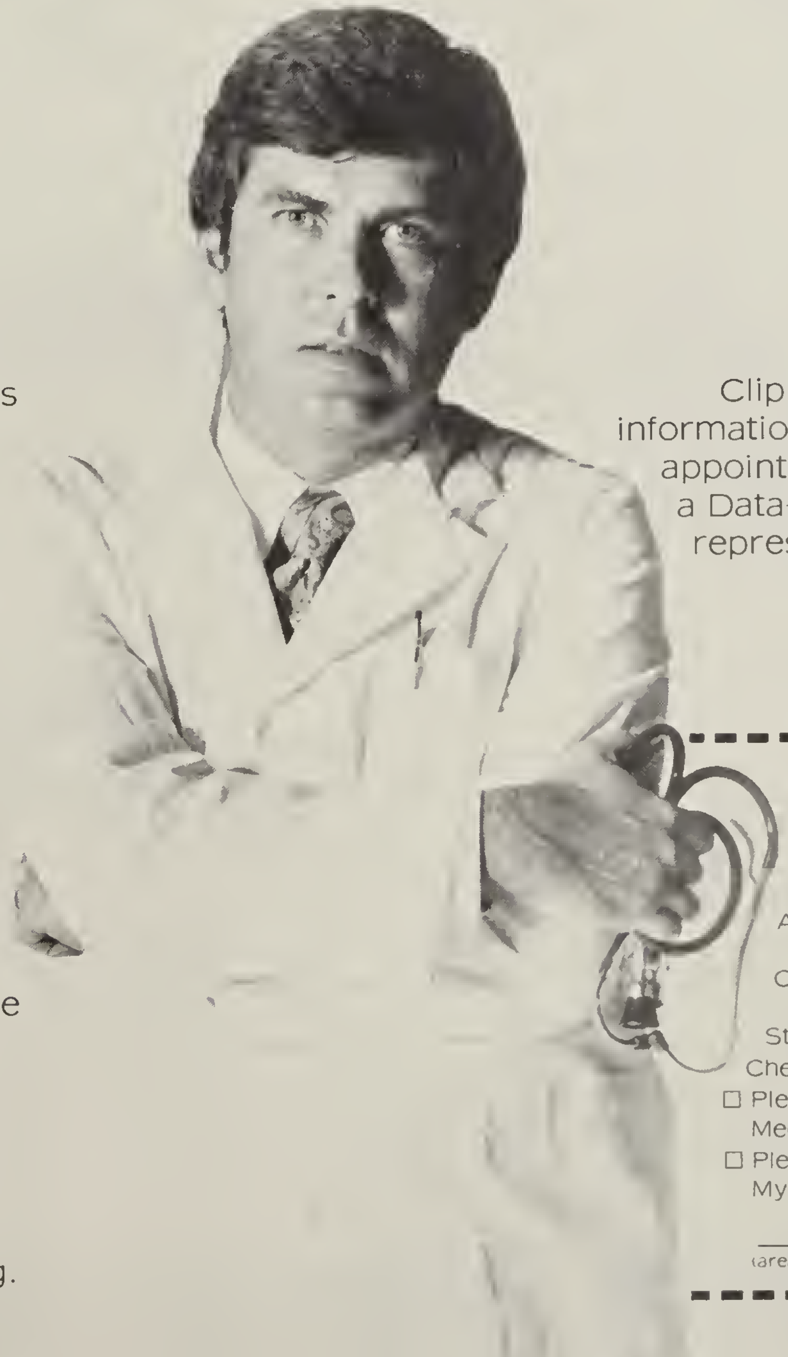

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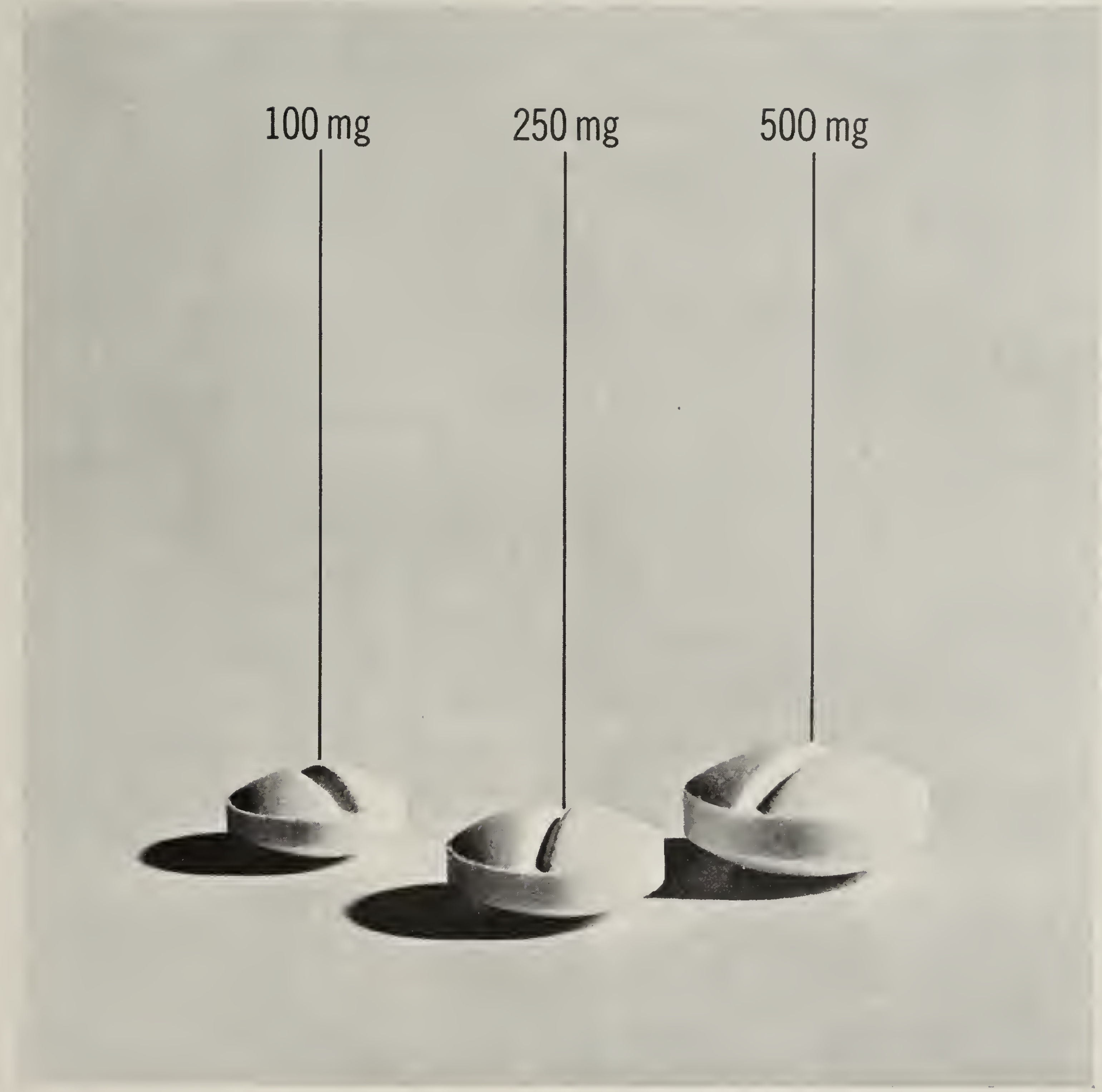

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Indications: Based on a review of this drug by the National Academy of Sciences—National Research Council and/or other information, FDA has classified the indications as follows:

"Possibly" effective: as adjunctive therapy in the treatment of peptic ulcer and in the treatment of the irritable bowel syndrome (irritable colon, spastic colon, mucous colitis) and acute enterocolitis.

Final classification of the less-than-effective indications requires further investigation.

Contraindications: Glaucoma; prostatic hypertrophy, benign bladder neck obstruction; hypersensitivity to chlordiazepoxide HCl and/or clidinium Br.

Warnings: Caution patients about possible combined effects with alcohol and other CNS depressants, and against hazardous occupations requiring complete mental alertness (*e.g.*, operating machinery, driving). Physical and psychological dependence rarely reported on recommended doses, but use caution in administering Librium® (chlordiazepoxide HCl) to known addiction-prone individuals or those who might increase dosage; withdrawal symptoms (including convulsions) reported following discontinuation of the drug.

***Usage in Pregnancy:* Use of minor tranquilizers during first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy. Advise patients to discuss therapy if they intend to or do become pregnant.**

As with all anticholinergics, inhibition of lactation may occur.

Precautions: In elderly and debilitated, limit dosage to smallest effective amount to preclude ataxia, oversedation, confusion (no more than 2 capsules/day initially; increase gradually as needed and tolerated). Though generally not recommended, if combination therapy with other psychotropics seems indicated, carefully consider pharmacology of agents, particularly potentiating drugs such as MAO inhibitors, phenothiazines. Observe usual precautions in presence of impaired renal or hepatic function. Paradoxical reactions reported in psychiatric patients. Employ usual precautions in treating anxiety states with evidence of impending depression; suicidal tendencies may be present and protective measures necessary. Variable effects on blood coagulation reported very rarely in patients receiving the drug and oral anticoagulants; causal relationship not established.

Adverse Reactions: No side effects or manifestations not seen with either compound alone reported with Librax. When chlordiazepoxide HCl is used alone, drowsiness, ataxia, confusion may occur, especially in elderly and debilitated, avoidable in most cases by proper dosage adjustment, but also occasionally observed at lower dosage ranges. Syncope reported in a few instances. Also encountered: isolated instances of skin eruptions, edema, minor menstrual irregularities, nausea and constipation, extrapyramidal symptoms, increased and decreased libido—all infrequent, generally controlled with dosage reduction; changes in EEG patterns may appear during and after treatment; blood dyscrasias (including agranulocytosis), jaundice, hepatic dysfunction reported occasionally with chlordiazepoxide HCl, making periodic blood counts and liver function tests advisable during protracted therapy. Adverse effects reported with Librax typical of anticholinergic agents, *i.e.*, dryness of mouth, blurring of vision, urinary hesitancy, constipation. Constipation has occurred most often when Librax therapy is combined with other spasmolytics and/or low residue diets.

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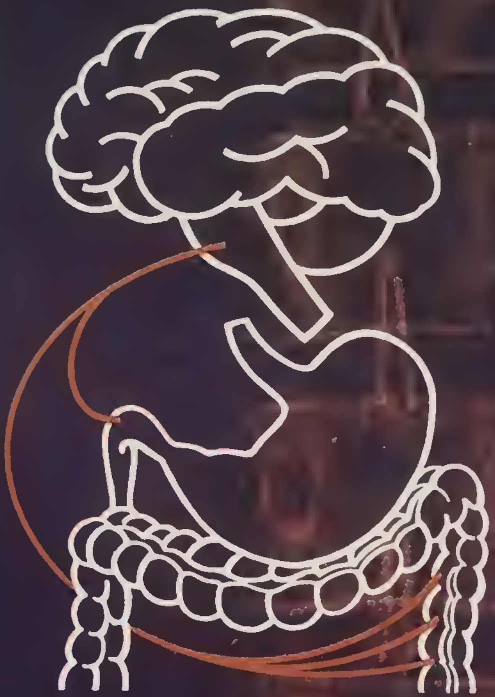

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THE CHICAGO DEPARTMENT OF HEALTH

NEWS LETTER

VOL. 18, NO. 1, MAY, 1978

AUTOMATIC BLOOD PRESSURE DEVICES

A Chicago Department of Health report on the Vita-Stat automated blood pressure machines concludes that their consistency and accuracy is sufficient for screening purposes.

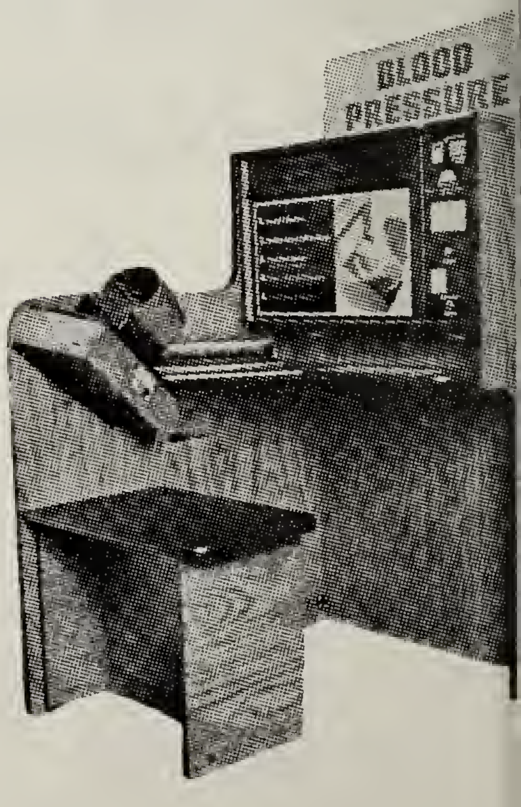
The report, the first in the nation based on a scientific study by a public agency, was prepared under the direction of Dr. David M. Berkson, the Department's heart disease control officer. It consists of (1) a statistical evaluation by Drs. Shekelle and Raynor of Rush-Presbyterian St. Luke's Medical Center, based on data collected over a four month period by Lawrence Shireman and Thomas Whipple and their co-workers in the Health Department, and (2) an evaluation of the results with recommendations for regulatory actions if deemed necessary. The report notes at the outset that any assessment of automatic blood pressure devices must compare their measurements with measurements by trained observers recorded by the traditional cuff ausculatory method. Since blood pressure may vary rapidly, the assessment of accuracy of measurement is difficult.

"In our evaluation of the Vita-Stat machine," the report states, "we found that, when the machine and a trained observer measure blood pressure simultaneously, there is a very good agreement." It is essential, however, that a machine must perform well in sequential measurement with trained observers as well as in simultaneous measurement. In sequential measurement the machine, in general, has a fair degree of accuracy. It does not perform as well, however, as trained technicians. In the laboratory analysis of the comparison between one machine and several technicians the machine tended to read systolic pressure 3.4mm higher and diastolic pressure 2.3mm lower. In the field analysis the machine tended to read systolic blood pressure 1.5mm and diastolic pressure 0.5mm higher than the technicians.

Although agreement between technicians in mean blood pressure measurement and in categorizing persons as normal, borderline or hypertensive tends to be closer than technician-machine agreement, these differences are small and of little practical significance in screening.

The report recommends that if licensing is insituted by the City of Chicago, periodic recalibration and testing should be required. The public must be informed that these instruments serve merely as screening devices; that they do not replace medical consultation and that, because blood pressure is subject to variation, several elevations or lack of elevations do not constitute a diagnosis of hypertension or normotension.

Blood pressure readings must be interpreted by a qualified medical professional and self-adjustment of medication based on automated blood pressure readings without medical supervision may be dangerous. The report concludes "that although the Vita-Stat machine does not perform as well as trained technicians, its consistency and accuracy is sufficient for screening purposes."



Seminars in Endocrinology
and Metabolism

Diabetes and Pregnancy

Jerome H. Targovnik, M.D.

Editors:
Stephen E. Dippe, M.D.
Jerome Targovnik, M.D.

Diabetes and pregnancy interact in a complex manner, usually to the detriment of both conditions. Due to various diabetogenic factors that are produced during pregnancy, diabetes may be precipitated on susceptible individuals, or overt diabetes aggrevated. Diabetes may affect the fetus through a number of mechanisms, leading to an increased fetal wastage.

Perinatal Mortality

Perinatal survival from a number of large centers tend to show steady improvement.[1,2] Patients with gestational diabetes or pregestational diabetics without overt vascular disease, can as a group, achieve a perinatal mortality rate no different from a non-diabetic group. Established diabetics with vascular disease do less well and may have a perinatal loss of 20%. A significant proportion of this fetal loss is due to congenital malformation. At the present time we do not know if early good diabetic control would decrease the incidence of malformations.

Gestational Metabolism

Pregnancy sets into motion many physiological adaptations designed to meet the nutritional needs of the fetus.[3] Both glucose and alanine, the main gluconeogenic amino acid, are transported across the placenta. This results in a reduction of the maternal fasting blood sugar to 55-65 mgm % during pregnancy. As a result of this, fasting maternal insulin is decreased while glucagon is increased, a situation that facilitates ketogenesis. Ketonemia has an adverse effect on the fetus and adequate carbohydrate must be provided to avoid this.

As pregnancy progresses, placental lactogen production increases.[4] This hormone has a growth hormone-like action, and has a major antagonistic action to insulin during the second and third trimesters of pregnancy. Placental lactogen also inhibits maternal growth hormone secretion, and following partuition, the absence of both hormones may result in a temporary markedly increased insulin sensitivity. The fetus has an immature system for regulating glucose.[5] The fetal alpha and beta cells do not respond to normal stimuli such as glucose or amino acids. In essence, the fetus can be considered as a passive receptor for glucose, not being able to control its own insulin or glucagon secretion. If maternal diabetes is not well controlled, the fetus is exposed to prolonged episodes of hyperglycemia. By poorly defined mechanisms, prolonged hyperglycemia enables the fetal beta cells to develop prematurely, resulting in increased fetal insulin production.[6] This is responsible for the hypermaturity syndrome found in diabetic neonates. Increased fetal insulin levels may be responsible for decreased surfactant production, resulting in the respiratory distress syndrome. Neonatal hypoglycemia is another consequence of fetal hyperinsulinemia.

Effect of Pregnancy On Maternal Carbohydrate Metabolism

Normal pregnancy has a predictable effect on carbohydrate metabolism. The criteria of O'Sullivan should be used rather than the standard values for glucose tolerance testing. Normal values during pregnancy include a fasting blood sugar of less than 90 gm %, one-hour value of less than 165, two-hour less than 145 and a three-hour value of less than 125. These values were derived from glucose tolerance tests on thousands of pregnant women.[7]

From: 909 E. Brill, Phoenix, AZ 85006.

Glucose is removed by the fetal placental unit throughout pregnancy. Insulin resistance is minimal during the first trimester, rising only in the second and third trimesters. The incidence of gestational diabetes will be minimal during the first trimester, and increases with the duration of pregnancy. Glucose tolerance testing should be done in the late second and third trimesters in high risk patients.

In established insulin dependent diabetics insulin requirements may decrease in the first trimester. Hypoglycemia and retonemia may occur. As pregnancy progresses, increasing doses of insulin will be needed to control carbohydrate metabolism.

Following loss of placental lactogen at delivery, the counter-insulin influences of pregnancy are removed. Growth hormone is still inhibited for a variable period of time after delivery, resulting in an increase in insulin sensitivity and a marked decrease in insulin requirements for the first few days after delivery.

Dietary Management

Diet therapy in pregnancy in general and for diabetics in particular has undergone numerous changes in recent times. At the present time a caloric intake of 40 to 50 k cal/kgm is thought to be ideal. Of this, 45% of the calories should be in the form of carbohydrate, while the absolute intake of carbohydrate should not be less than 200 gms/day. Protein requirements are in the range of 1.3 gms/kgm body weight, with higher intakes recommended for pregnant teenagers. The remainder of the calories are supplied as fat.

A total weight gain of 24-28 pounds during pregnancy is associated with the least incidence of hypertension, prematurity and perinatal mortality. Weight gain should be minimal during the first trimester followed by a linear rise during the later two trimesters. The presence of diabetes should not influence this pattern of weight gain.

Even though the majority of gestational diabetics are obese, pregnancy requires adequate nutrition, rather than severe caloric restriction, and weight reduction is unacceptable. Maternal ketonemia may cause various degrees of irreversible nervous system damage in the developing fetus. This ketonemia is aggrevated by caloric restriction.

Insulin

The assessment of blood sugars should be judged by pregnant non-diabetic standards, rather than the non-pregnant state. Normal fasting blood glucose in pregnancy range from 55-75 mgm % with random non-fasting levels ranging between 80-100 mgm %. Therapy should be designed to mimick these values as closely as possible without causing hypoglycemia.

When insulin is required, split doses of a combination of short and intermediate insulins are usually required. Blood sugars are monitored frequently, and insulin doses are adjusted accordingly. Some centers are encouraging patients to monitor their own blood sugars with a dextrometer. This has been shown to reduce the need for hospitalization before delivery.

TABLE I

White's Classification of Diabetes in Pregnancy

Class A:	Glucose tolerance test abnormal. No symptoms. Euglycemia maintained with treatment by appropriate diet but without insulin.
Class B:	Adult onset (age 20 or older) *and* short duration (less than 10 years).
Class C:	Relatively young onset (age 1-19) *or* relatively long duration (10-19 years).
Class D:	Very young onset (age less than 10) *or* very long duration (20 years or more) *or* evidence of minimal vascular disease (e.g., background retinopathy).
Class E:	Pelvic vascular disease (determined by x-ray).
Class F:	Renal disease.
Class R:	Proliferative retinopathy.
Cl. RF:	Both renal disease and proliferative retinopathy.
Class G:	Multiple failures in pregnancy.
Class H:	Arteriosclerotic heart disease.
Class T:	Pregnancy after renal transplantation.

At partuition, when placental lactogen drops rapidly, extreme insulin sensitivity is usually the rule. Use of multiple doses of short acting insulins are preferred at delivery and for two to three days afterward. This regimen decreases maternal ketosis during delivery, a situation which may be harmful in a premature birth. It also minimizes the incidence of maternal hypoglycemia after delivery.

Maternal Morbidity

Table I presents the most recent modifications of the White classification. Two new categories H and T have been added and two other groups E and G have been essentially deleted. With the exception of Class H, maternal mortality has been eliminated in the other categories. Long standing diabetics may have accelerated coronary artery disease, and its manifestation in the pregnant female may be atypical. In a recent study only one of our Class H mothers was alive one month post delivery.[1]

The effect of pregnancy on diabetic retinopathy is unpredictable. Background retinopathy acquired during pregnancy is usually benign, and pre-pregnancy retinopathy does not usually progress.[8] An ophthalmologist should follow these patients during pregnancy, ideally with fluoroscein angiography done in the first trimester. If the retinopathy progresses to a prolifereative stage, laser therapy has been shown to be helpful.

The effect of pregnancy on diabetics nephropathy is not known at the present time. Urinary tract infection, and hypertension have been shown to cause deterioration of kidney function in these people, and should be prevented or promptly treated.

The preceding has been a summary of our experience in the management of pregnant diabetics. Close cooperation is required between the obstetrician and internist in these instances to optimize the delivery of a healthy child.

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Seminars in Gastroenterology and Liver Disease

Modern Medical Therapy of Uncomplicated Duodenal Ulcer

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Editors:
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The medical dictum, "no acid, no ulcer," has long dominated our conception of the pathogenesis and treatment of duodenal ulcer (DU). We know that as a group, patients with DU produce more acid than an age and sex-matched group of patients without DU. Moreover, intensive medical therapy aimed at neutralizing or inhibiting production of gastric acid has resulted in healing of DU. Finally, surgical procedures that reduce gastric acid production result in DU healing while ulcer recurrence is usually associated with inadequate section of vagal fibers, thus allowing for continued acid release.

We have at our disposal three agents to treat DU that reduce total hydrogen ion in the duodenum: antacids, anticholinergics and the new H2-blocker, cimetidine. Despite the ability of these drugs to lower gastric acid output and the logic that demands that they should therefore be valuable, randomized clinical trials in DU patients have usually failed to show an effect of antacids and anticholinergic drugs on three important clinical parameters: rate of ulcer healing, prevention of complications (i.e., bleeding, perforation, obstruction), and prevention of recurrence.[1] The number of adequately controlled, double-blind trials using cimetidine is still too limited to justify firm conclusions regarding the effect of this drug in those areas. Moreover, these medications may be associated with side effects that may prove uncomfortable at the least and as dangerous as the original ulcer at the extreme. What then, is the place of antacids, anticholinergics and cimetidine in the modern therapy of DU?

Antacids theoretically promote DU healing by three mechanisms: 1) neutralization of acid, 2) irreversible denaturation of pepsin above pH6 and 3) inhibition of pepsin activity above pH 4.5.[2] It has recently been emphasized that antacids are not all alike but vary considerably in potency.[3] Mylanta II is the most potent available antacid that does not contain calcium carbonate.[3] (Calcium carbonate, although a powerful antacid, is potentially dangerous because it may cause hypercalcemia, deterioration of renal function and gastric acid rebound.[4]) When using an antacid as effective as Mylanta II, the optimal single dose approximates 2-3 tablespoons (30-45 cc)[3]; the dose of weaker antacids must be correspondingly raised. Antacids are most effective when ingested one hour and again at three hours after meals.[5] Tablet antacids are ineffective because they are poorly soluble; the most diligent chewing action cannot provide a sufficiently large antacid surface area for adequate neutralization of acid.[4] The optimal duration of antacid therapy for DU healing is unknown. Studies showing that the average period for radiologic healing of DU is 40 days[6] and that 50% of DU's heal endoscopically in six weeks[2] suggest that antacids should be continued for at least two months if no other agents are used.

Antacids, in common with other drugs, may have serious side effects. The potential complications of calcium-containing antacids have been cited above. Use of sodium bicarbonate on a regular basis may produce alkalosis and add a large sodium load to patients with

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From: Tucson Hospitals Medical Education Program, Tucson Medical Center, Tucson, AZ. Reprint requests to Dr. Stillman, 5200 E. Grant Rd., Ste. 611, Tucson, AZ 85712.

congestive heart failure, renal failure or cirrhosis. Prolonged use of non-absorbable antacids containing aluminum may produce the phosphorus-depletion syndrome consisting of anorexia, weakness and skeletal resorption resulting in hypercalciuria and renal calculi.[4] Aluminum-containing antacids tend to constipate and may even produce bowel obstruction — especially when used after barium x-ray studies or in elderly patients.[2] Antacids containing predominantly magnesium compounds are more potent antacids than their aluminum-containing counterparts but also tend to produce diarrhea.[3] Moreover, use of magnesium-containing antacids in patients with renal failure may produce hypermagnesemia with resultant repsiratory depression.[2] Finally, antacids may interfere with absorption of other drugs such as penicillin, sulfa and tetracycline. Antacids containing magnesium hydroxide enhance absorption of bishydroxycoumarin while antacids containing aluminum hydroxide impair absorption of isoniazid.[4]

Anticholinergic drugs reduce gastric basal acid output. However, only half the studies with these drugs have shown a significant effect on depression of maximal stimulated acid output.[7] Moreover, there has been no consistently demonstrable beneficial effect of anticholinergic medication on DU symptoms, rate of healing, recurrence or complications.[7] When discussing these drugs, authors have emphasized that they must be administered in near-toxic doses to produce an adequate clinical effect.[7] However, Feldman et al have recently shown that low dose therapy may be as effective as high doses in reducing gastric acid secretion.[8] In addition to the well-known side effects of dry mouth and blurred vision, anticholinergic drugs may precipitate urinary tract or gastric outlet obstruction by producing atony proximal to a stenotic passage. They may increase gastroesophageal reflux by relaxing the lower esophageal sphincter and are therefore contraindicated in patients with symptoms of esophagitis. They should be used with caution in patients with tachycardia, ileus, myasthenia gravis, narrow angle glaucoma and severe ulcerative colitis.

H2-blockers antagonize the action of histamine and to a slightly lesser extent the actions of acetylcholine and gastrin on gastric parietal cells. Histamine has been thought by some to be the final common chemical mediator through which other agents such as acetylcholine and gastrin produce acid.[9] Studies with H2-blockers have shown that they effectively inhibit overnight gastric acid secretion and considerably decrease meal-stimulated secretion as well.[10-12] In one study performed on patients with active DU, a single oral bedtime dose of cimetidine 400 mg reduced basal acid secretion to zero for eight hours in half the subjects.[10] In another study of patients with DU, basal secretion was reduced in all subjects to anacid levels for five hours following a single oral bedtime dose of cimetidine 300 mg while acid secretion was reduced by 67% for three hours after a meal by cimetidine 300 mg given orally 30 minutes before eating;[11] this figure approximates acid reduction following vagotomy.[13] In clinical trials, cimetidine has produced a clearly increased incidence of DU healing when compared to placebo.[14] One study reported that cimetidine and an antacid (approximately equivalent to Mylanta II) were equally effective at healing DU and relieving DU symptoms but that patients taking cimetidine did not report side effects while 27% of patients taking antacid had diarrhea.[15] This finding correlates with another report that demonstrated that when cimetidine was compared to antacids taken one and three hours after meals, comparable amounts of acid were delivered into the duodenum in each instance.[16]

Several reports have noted a disturbingly high rate of recurrence of DU following withdrawal of an H2-blocker[17,18] although a more recent study did not recognize an increased incidence of recurrence or complications after withdrawal from cimetidine.[19] Moreover, withdrawal of cimetidine has not been associated with gastric acid rebound.[14] Cimetidine taken at bedtime or twice a day has also been found to be effective in preventing DU recurrence when compared to placebo.[19,20]

Cimetidine has been surprisingly free of major side effects.[21,22] Although metiamide, an earlier H2-blocker, was associated with several cases of agranulocytosis, no hematological complication has been definitely attributable to cimetidine. Indeed, cimetidine was used in a patient with Zollinger-Ellison syndrome in whom metiamide had produced severe granulocyte depression; no adverse hematological effect was found using cimetidine.[23] Patients taking cimetidine may exhibit small, insignificant increases of serum creatinine that revert to normal following withdrawal of the drug. There is no evidence that cimetidine is nephrotoxic.[22] However, the drug is excreted via the kidneys and dosage must therefore be adjusted in patients with renal failure.[24] Cimetidine may produce transient small elevations of SGOT that return to normal even during continued therapy. There is no evidence that the drug is hepatotoxic.[22] Cimetidine has produced gynecomastia in a small number of men on continuous therapy for at least three months; blood levels of testosterone, LH and FSH have been normal in all patients in whom they have been measured.[22] There is minimal available information concerning the effect of cimetidine on drug-drug interactions in humans.[22]

In the face of new medical developments and information, how should the modern physician treat uncomplicated DU? The non-absorbable antacids, used in proper dosage and at the appropriate times following meals, are safe and still a mainstay of therapy. Mylanta II is the antacid of choice today but may produce troublesome diarrhea in many patients. If this occurs, diarrhea may be alleviated by mixing Mylanta II with an aluminum-containing antacid in varying proportions; a table of potency and ingredients of commonly used antacids is found in reference 3. However, because aluminum antacids are weaker than Mylanta II, the volume of each dose of the mixture must be increased to produce an antacid effect equivalent to pure Mylanta II.

When taking large volumes of antacids over periods as long as two months, a patient may ingest considerable quantities of sodium. Sodium intake may be decreased by using a low sodium antacid; a table of sodium content of commonly used antacids is found in reference 4. Although a recent study indicated that large doses of antacids were superior to placebo with respect to healing of DU's, the presence of pain was a poor guide to DU healing;[25] a significant proportion of symptom-free patients still had a DU while a similar proportion of symptomatic patients had healed their ulcer. Thus, the optimal duration of antacid therapy for DU is still in question. Finally, patient compliance is necessary for antacid therapy to succeed. A notable study documented that even in a hospital environment, only 50% of prescribed antacid doses were taken by the patients.[26] The physician has a responsibility to encourage the patient and educate him concerning the importance of taking antacids on time.

Anticholinergic drugs should never be used alone in therapy for DU but should be used only in combination with either antacids or cimetidine. The combination of cimetidine 300 mg and propantehline 15 mg has been found to suppress meal-stimulated gastric secretion better than either drug alone.[8]

Cimetidine is clearly an effective therapeutic agent for the short-term treatment of DU. It should never be used for treatment of non-specific abdominal pain but should be employed only after the diagnosis of ulcer has been proven by x-ray or endoscopy to avoid the belated discovery that the patient's abdominal pain was due to carcinoma or other problems unrelated to acid peptic disease. Cimetidine has been cleared by the Food and Drug Administration for the treatment of DU at a dose not to exceed 300 mg qid for longer than eight weeks (it has been cleared for use in Zollinger-Ellison syndrome, systemic mastocytosis and other hyperchlorhydric states for longer than eight weeks). It is administered at a dose of 300 mg with meals and at bedtime when it is particularly valuable because it can suppress overnight gastric secretion more completely and for a longer period than antacids or anticholinergics while allowing uninterrupted sleep. However, cimetidine's long-term side effects and effectiveness in suppressing DU recurrences are still under investigation.

If cimetidine alone or in combination with other agents is found to be safe and consistently effective in speeding DU healing and reducing DU recurrences and complications, we may be closer to grasping the hitherto elusive philosopher's stone of gastroenterology — the medical control of DU.

Addendum:

Cimetidine has recently been implicated in the production of severe neutropenia in a single case report. The association between cimetidine and neutropenia was proved by culture of the patient's bone marrow cells both in the presence and absence of cimetidine at concentrations similar to those found in serum after therapeutic doses. No effect was found on either erythrocyte or platelet presursors. (Dr. N.E. Diamant: Personal communication). Cimetidine may also induce confusion and other signs of cerebral dysfunction, especially when used in high dosage or in patients who are elderly or who have renal disease (Med Lett Drugs Ther 20:77-78, 1978).

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Use of Anticholinergic Agent in Duodenal Ulcer

David C.H. Sun, M.D., F.A.C.P.

The pharmacological medical management of duodenal ulcer is concerned largely with the inhibition and neutralization of acid-pepsin secretion. It is thus important to administer an anticholinergic drug that will inhibit acid secretion at its source, so that the reduced volume of acid secretion would be effectively neutralized by the addition of an antacid, and more important, the use of anticholinergics at bedtime for the inhibition of nocturnal gastric secretion. The attitude toward the currently available synthetic anticholinergic drugs has passed from an initial period of great enthusiasm, through a rebound period of excessive skeptism, to the present phase of realistic assessment. The anticholinergic drug has a definite role in duodenal ulcer therapy when administered with proper regardfor its physiologic properties — the dosage, the type and its advantages and limitations.

To achieve therapeutic effectiveness of an anticholinergic drug, emphasis should be placed on the use of a proper dosage tailored to the patient. The optimal effective dose is defined as that dose one increment below the dose that produced uncomfortable symptoms of parasympathetic inhibition — such as excessive dryness of the mouth, blurring of vision, palpitation or headache. A large number of anticholinergic drugs are available; however, they vary in their potency, in their degree of selectivity on the stomach and in their duration of action. We have found that atropine, tincture of Belladonna, and methantheline bromide are much inferior to propantheline and Glycopyrrolate in their antisecretory potency.

After healing of an active ulcer, the chief problem is the prevention of recurrence of duodenal ulcer. In a controlled study on the use of anticholinergic drug for the prevention of recurrence of duodenal ulcer, the patient was instructed to take the optimal effective dose of anticholinergic drug or placebo, three times daily before each meal, and at bedtime. Recurrence of ulcer disease was observed in 98 (68%) of the 145 patients on long term placebo therapy, and in only 28 (17%) of the 160 patients on long-term glycopyrrolate therapy followed for a one-year period. The encouraging results in our studies, as opposed to those of others, might be attributed to the utilization of an "effective antisecretory drug and, in addition, to the use of an "optimal effective dose." However, I wish to emphasize that anticholinergic drug cannot in any sense be looked upon as "ulcer preventor." A proper understanding of the whole patient and the whole disease is essential.

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Infectious Disease

Tuberculous Pericarditis

A Case Report

Steven M. Gonzalez, M.D.
R. Leighton Fisk, M.D., F.A.C.S.

In concluding his classic review, Schepers wrote, "It may be confidently anticipated that this interesting, but also serious disease, tuberculous pericarditis, will vanish.[1]" Sixteen years later in the midst of advanced therapeutic and diagnostic modalities, tuberculous pericarditis continues to occur as dramatically and obscurely as Osler[2] first described. Prior to 1950 pericarditis was found in 2.5 to 7.8% of all cases of tuberculosis.[1] A 1970 series reports an incidence of 0.35%.[3] In the last eighteen months there have been 300 new cases of active tuberculosis in Maricopa County. Two have involved the pericardium, accounting for an incidence of 1%. In this country extrapulmonary tuberculosis cases average 4,000 per year and are on a proportionate increase, accounting for 12.4% of all new cases in 1973.[4] Thus, although becoming rare, tuberculous pericarditis has not yet met Schepers' predicted fate and further cases are to be expected in areas where tuberculosis is relatively common.

Case Report

A 47-year-old diabetic, hypertensive housewife was well until November, 1977 when she complained of a nine pound weight gain, swelling of face and ankles and dyspnea of four weeks duration. There were no other symptoms. Examination revealed a blood pressure of 130/80 mm Hg without paradox, a normal sinus rhythm of 88, temperature of 98.6° F., a respiratory rate of 34 per minute, facial and pedal edema, and bibasilar rales. Cardiomegally, rubs or extra sounds were not present. Diuretics and digoxin were given without alleviation.

Two months later a chest radiograph demonstrated a left pleural effusion and right-sided, fibrotic, interstitial markings with pleural thickening at the right base. The heart was mildly enlarged. An electrocardiogram demonstrated normal sinus rhythm, low voltages, and T wave inversion in I, II, aVF and V_2 through V_6. An intermediate purified protein derivative skin test for tuberculosis was 12 mm, having been negative three years previously. A presumptive diagnosis of pleural-pericardial tuberculosis was made and the patient was admitted to the Maricopa County General Hospital.

On admission the patient complained of severe dyspnea on exertion, one pillow orthopnea, and vague left precordial chest pain. No effective diuresis had occurred despite the use of 120 mg of furosemide per day. Blood pressure was 132/72 mm Hg with a 24 mm Hg paradox. The heart rate was 80 beats per minute and regular. The patient was afebrile. Examination was otherwise unchanged except for dullness to percussion at the left base. An echocardiogram revealed a small pericardial effusion without chamber enlargement. Serology for coccidioidomycosis was negative. The erythrocyte sedimentation rate was 11 mm per hour. White blood cell count was $6900/mm^3$ with 68% segmented neutrophils, 25%

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lymphocytes, 5% mononuclear cells and 2% eosinophils. A thoracentesis and pleural biopsy done on the second hospital day demonstrated no infectious organisms by microbiological or histological techniques. Sputum examinations were similarly unrevealing. The patient was given isonicotinic hydrazide (INH) 300 mg orally per day, and ethambutol, 1200 mg orally per day. Diuretics, digoxin, and insulin were continued.

One month following discharge the patient's symptoms were unchanged. The blood pressure was 110/82 mm Hg with a 15 mm paradox. An erythematous, confluent, macular abdominal rash and pre-tibial purpura had developed. Moderate ascites and tender hepatomegally were newly present. The chest radiograph demonstrated increased right lower lobe atelectasis, a large left pleural effusion and pulmonary vascular congestion with interstitial edema. A repeat tuberculin skin test was negative. Platelet counts and clotting parameters were normal. White blood cell count was 7100/mm^3 with 60% segmented neutrophils and 18% band forms. An echocardiogram did not demonstrate a pericardial effusion. Right sided cardiac catheterization via the right internal jugular vein with a #7 Swan-Ganz catheter revealed a mean right atrial pressure of 30 mm Hg; right ventricular pressures of 55/20 mm systolic/diastolic (mean of 22 mm); pulmonary artery wedge pressure of 25 mm Hg, indicating equalization of diastolic pressure of the right and left ventricles. Wave forms were not recorded.

On March 1, 1978 operation was performed through a median sternotomy. At the beginning of the operation, the blood pressure was 90 mm Hg systolic and central venous pressure 34 cm H_2O. The anterior pericardium was found to be markedly thickened and no cardiac activity could be visualized through the dense anterior mediastinal and pericardial tissue reaction. Anterior and bilateral subtotal pericardiectomy was performed, removing all of the diseased pericardium posteriorly to the phrenic nerves. No pericardial effusion was present. Postoperatively the blood pressure was 120/80 mm Hg and central venous pressure 12 cm H_2O.

A specimen of excised pericardium was very fibrous and thickened to 0.2 to 0.5 cm. The surface demonstrated many small, white nodules. Numerous caseating granulomata with extensive, surrounding fibrosis were noted microscopically. Lymph nodes from the anterior mediastinal fat demonstrated similar granulomata. Acid-fast organisms were seen with special stains and *Mycobacterium tuberculosis* was subsequently grown. The patient's rash resolved with the substitution of rifampin for INH.

The patient was discharged on ethambutol, 1200 mg per day orally; rifampin, 600 mg per day orally; and streptomycin, 1 gram intramuscullarly two to three times per week. Diuretics and digoxin were discontinued as the patient underwent a 30 pound diuresis with complete clearing of symptoms. During investigation of contacts the patient's husband was found to have active pulmonary tuberculosis.

After six months of follow-up the patient continues to be asymptomatic.

Comment

This case is of interest as it describes a rare, but important complication of tuberculosis which, if left untreated, may lead to the patient's demise. Such a complication may occur in the face of adequate anti-tuberculous therapy and may only be resolved by pericardiectomy. Tuberculous pericarditis should be considered in any patient who presents with symptoms and signs of pericardial constriction, pleural and parenchymal radiographic abnormalities, and a positive tuberculin skin test from an area with a high incidence of tuberculosis.

Primary tuberculous pericarditis is extremely rare and may more properly represent an inability to find evidence of previous or concurrent tuberculosis elsewhere. However, as in the current case, it is often the first manifestation of an otherwise inapparent infection.[5] Osler[2] and Harvey[6] were early to note that the most usual mode of infection was retrogradely through involved mediastinal and tracheo-bronchial lymph nodes. Such spread may occur in the absence of radiographic appearance of node involvement and probably occurs early during primary infection.[7] Direct ulceration from casseous lymph nodes, a paravertebral abscess or infected visceral pleura is less common. Rarely, hematogenous matastasis to the pericardium occurs secondary to osseous or genitourinary infection as part of miliary spread. However, this mode of infection is generally thought to be clinically unimportant.[7] Conversely, pericarditis can be followed by miliary spread.

The mode of progression and clinical appearance of tuberculous pericarditis can be quite varied. Peel proposed a four-step classification based on a sequence of pathological events: 1) a "dry" or fibrinous stage, 2) an "effusive" stage, 3) an "absorptive" stage, and 4) a "constrictive" phase.[7] The fibrinous stage is rarely described and is characterized by a granulomatous reaction with accompanying diffuse deposition of fibrin. There is uncertainty as to whether this form can exist as an isolated event or always progresses to the effusive stage.[8] The effusive stage may be associated with effusions as large as 2,000 cc. The character of the effusion is variable, although it is generally stated that it is an hemorrhagic exudate with a predominant lymphocytic white cell differential.[5] Acid-fast organisms are seen on direct examination of the pericardial fluid in somewhat less than 50% of cases, while cultures and innoculation may yield slightly higher results.[9] It is estimated that a concentration of one million organisms per cubic centimeter is necessary in order to find acid-fast bacilli on smear.[1] It is not surprising that prior to the development of effective anti-tuberculous chemotherapy, the finding of organisms on smear heralded a dim prognosis.[6,7,10]

The effusive stage may subside spontaneously without sequelae or be completely unnoticed, progressing silently to the constrictive phase. Gimlette noted that patients with constrictive pericarditis of various etiologies presented in two modes: 1) acute constriction following an attack of clinically obvious pericarditis, or 2) with "chronic" constriction, developing slowly over more than a year's duration.[11] Gabriel and Shelburne reported ten cases of the former type which went on to constrict in as little as forty-four days following an episode of tuberculous pericarditis.[12] The present case represents an example of the later group in which constriction occurred in the absence of symptomatic pericarditis, although the four month course is remarkably short. In such cases the only clue to a tuberculous etiology may be an associated pleural effusion, pulmonary infiltrate or positive tuberculin skin test.

Rooney reported associated pleural effusions in 71% of patients with tuberculous pericarditis.[3] However, in 14 patients with proven tuberculous pericarditis, Fowler found only two with associated pleural or parenchymal abnormalities.[9] Thus, the presence of a pleural effusion offers a convenient source of diagnostic material, but its absence should not discourage a more extensive diagnostic pursuit.

Initially the tuberculous pericardial process may be entirely effusive with a significant paradoxial pulse, absent Kussmaul's sign and normal right atrial pressures with progression to an effusive-constrictive pattern which is entirely similar except that right atrial pressures are elevated and remain so despite pericardiocentesis.[13] Physical signs such as ascites, peripheral edema and hepatomegally are universally found in long-standing constriction, but may not be present early in the course. Thus, it is important to obtain cardiac catheterization data during and after pericardiocentesis in all patients with tuberculous pericarditis to rule out the presence of a constrictive process. Constriction is important to document as it is unlikely to respond to and may develop silently in the presence of chemotherapy.[14]

Chemotherapy has dramatically affected the natural history of tuberculous pericarditis. Yet, there is no current agreement regarding a specific regimen. Nevertheless, it is agreed that therapy with at least two drugs be initiated with little delay and continued for at least eighteen months.[15,16] Steroids have been advocated for use early in the effusive stage to diminish effusion and prevent subsequent constrictive fibrosis.[3] However, prospective and controlled studies using steroids are lacking.

Pericardiectomy is universally recommended when jugular venous distention, hepatomegally and peripheral edema are present.[15,17] Surgical mortality has decreased dramatically to 4 to 6% within the last two decades. Mortality is generally related to concomitant myocardial disease.[10,13,18] Pericardiectomy can be accomplished without tuberculous dissemination if concomitant chemotherapy is administered.[19] Surgical failures occur when delay has led to pericardial calcification and unresectable adhesions.[18] Excellent results are the rule and generally are maintained indefinitely.[18] Thus, pericardiectomy is recommended for all cases of constriction with better results achieved if the patient is referred to the surgeon at the earliest indication of constriction.

Summary

A case of tuberculous pericarditis is presented which progressed through an effusive-constrictive phase to constriction despite adequate chemotherapy. Pericardiectomy was dramatically curative. Constrictive pericarditis should be considered in patients who present with hepatomegally, ascites and peripheral edema. Tuberculosis should be considered as a possibile etiology, especially in areas where the case rate is high. Cardiac catheterization should be performed in all patients and pericardiectomy considered in patients with right atrial pressures which remain elevated after pericardiocentesis. Pericardiectomy is life-saving in those patients with the clinical findings of jugular venous distention, hepatomegally, ascites and peripheral edema.

Acknowledgements

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Obstetrics and Gynecology

Office Gynecology

Part II

John V. Kelly, M.D.

Donald J. Ziehm, M.D., Editor

The increased awareness of side-effects to oral contraceptives has rejuvenated interest in older techniques which have no adverse physiological effects. Condoms of better material and in various colors are again being advocated for contraception and as protection against venereal disease. Barrier techniques (diaphragms, foam, etc.) have now added a suppository, the Encare Oval, which produces a spermicidal and viscous barrier to sperm ascent. Studies in Germany indicate a high rate of effectiveness. In addition, it is simple to carry in a purse, is self-insertable and costs 60 cents each. However, recent experience in the U.S. has shown the Oval to be less effective than previously advertised. Spermicidal jellies and creams are also being advocated; the addition of flavor and scent attempts to improve clientele appeal.

INTRA-UTERINE DEVICES

The Lippes Loop and the Saf-T-Coil have decreased in popularity since the introduction of the Cu-7 in 1974, and the Progestasert, marketed in 1975. The Cu-7, which acts either on the blastocyst or via spermicidal properties, can be left in for 3 years before replacement; it does, however, have a slightly higher incidence of ectopic pregnancies than other IUDs. The technique of insertion with the Cu-7 makes uterine perforation less likely. The T-shaped progestasert releases 65 ug of Progesterone per day to make the local endometrium incompatible for implantation. It must be replaced annually.

IUDs should *always* be removed if a pregnancy occurs; the risk of septic abortion and possible maternal death is great. If the IUD suture cannot be visualized in the cervical canal, it may be located in the myometrium or peritoneal cavity. In the non-pregnant patient the position of the IUD may be determined by placing a sound or second IUD in the uterus and taking an x-ray. Removal can then be undertaken by D&C or laparoscopy. In the pregnant uterus the IUD can be detected by ultrasound or x-ray; therapeutic abortion should be considered if the IUD is in the pregnant uterus and removal is impossible by the usual means.

ORAL CONTRACEPTIVES

The combination oral contraceptives (OC) have either mestranol or ethinyl estradiol as the "estrogen" (they have similar potencies, but mestranol has a slightly longer half-life), and one of four progestins (Norethindrone and Norgestrel are slightly more androgenic than Norethynodrel or Ethynodiol). The mechanism of action is by inhibition of ovulation, implantation and ovarian-tubal transport as well as by creation of a cervical mucous which is hostile to sperm-migration.

Indications for use of OCs include birth control, control of menstrual irregularities, inhibition of abnormal bleeding in patients with coagulation defects, relief of dysmenorrhea and endometriosis, promotion of secondary sexual characteristics in patients with primary amenor-

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rhea, and treatment of acne.

Side effects to the combined pill include risks of thrombophlebitis (nine-fold increase over non-users), pulmonary and cerebral emboli, hypertension, weight gain, growth of myomas, chloasma, conjunctival edema in contact lens wearers, nausea, etc.

Oral contraceptives are absolutely contraindicated in patients with breast cancer, estrogen-dependent tumors, liver disease, pregnancy and thrombophlebitis. Relative contra-indications include diabetes, hypertension, women with sickle cell disease or hyperlipidemia, and patients with migraine. Patients over age 35 must be informed that the use of the pill is associated with increased risks of myocardial infarction, particularly if they are obese, smoke or have diabetes or hypertension. There is a two-fold increase in gall-bladder disease in pill users. Although rare, liver adenomas are another potential complication.

In the belief that most of the OC complications are related to the dose of estrogens, the current trend is to begin with a preparation containing 30-35 ug of estrogen (rather than 50 or 80 ug). However, some break-through bleeding may occur on this dosage. Patients should start the pill on day 5 after a normal menses, immediately after a first trimester miscarriage or one week after a second trimester abortion, or two weeks after a normal delivery (presuming the patient is not lactating).

If a pill is missed for one or two days, the patient simply doubles the dosage for each day skipped, then continues on one pill daily. If three or more days are missed, another form of contraception should be used until the next period begins. The OC may then be restarted at the usual dosage.

The mini-pill (progestin only) has a high incidence of break-through bleeding, is less effective in preventing pregnancy than the combined pill, and has the same potential complications.

MENOPAUSAL SYMPTOMS AND USE OF ESTROGENS

Numerous studies show that the risk of endometrial cancer is increased three-fold in women of menopausal age who take estrogens, and increases if the estrogens are continued for longer than 5 years. However, many women have such severe menopausal symptoms that estrogen therapy is necessary. In such cases, estrogens should be used in the lowest effective doses, e.g. 0.3 mg Premarin for as short a period as is feasible.

The level of endogenous estrogen is increased in obese women due to the conversion of adrenal steroids to estrone in the fat. Therefore, the use of exogenous estrogen in obese women should be avoided because the stimulus for growth of endometrial cancer is increased.

DYSFUNCTIONAL UTERINE BLEEDING

In the woman with too frequent or excessive menses in which there is no detectable pathology (endometrial disease, coagulation defects, IUDs, thyroid disease, P.I.D., fibroids, etc.), two approaches are possible. First, a D&C to rule out pathology is successful itself in 40 percent of cases and removes the patient's always present fear of developing cancer. Secondly, a hormonal regimen for three months is successful in 85 percent of cases. Several regimens are good and no one seems better than the rest:

1. Premarin 2.5 mg daily for three weeks. Provera, 10 mg for the last 5 days of the three week span.
2. Any combined oral contraceptive daily for 7 days, then a micro-dose Progestin for two weeks.
3. Enovid, 5 mg BID for three weeks.

For the patient (usually a teen-ager) who has excessive, heavy dysfunctional bleeding, control can be achieved by giving Premarin, 2.5 mg every 4 hours for 24-48 hours. This is followed by the use of any combined oral contraceptive for three weeks in addition to oral iron therapy.

COUNSELLING

Marital and sexual problems contribute to a significant percentage of office gynecology problems. Their identification is vital for they commonly are responsible for somatic and coital complaints. The challenge to the physician who detects these problems is twofold:

—Does he have the time to listen and respond with genuine interest and compassion?

—Does he have the experience, insight, and desire to try to help the patient work out her problems?

Every office practitioner is busy; waiting rooms are full, hospital emergencies, deliveries and phone calls too often intervene. Time is at a premium. Some fortunate physicians have developed the skill to diagnose quickly and help the patient plan effective means to deal with her problems. Others are compassionate but feel helpless; the magnitude and duration of the problems make them seem invincible.

One solution, in a way, is a "cop-out" but may be the most efficient for the physician, his nurses, his other patients and himself — namely, referring the woman to a lay counselor, priest, minister or rabbi. It is essential that the physician not only "know thyself" but also know thy counselor, priest, etc. An unsatisfactory referral resource can be tragic. Your follow-up telephone contact with the patient to inquire of progress is often nearly as helpful as the counselor's advice, for it transmits that essential ingredient of medicine — "I care."

Another solution is the development of skills in office counselling by attending carefully screened post-graduate courses. It is not uncommon for the physician to be unaware of the effective communication and therapeutic techniques in office practice. Until recently, teaching of such techniques has been virtually absent in medical school curricula, and even rarer in most house-officer training programs. On-the-job learning is what most physicians must do. It is indeed rewarding when a post-graduate course is available which can help to fill the vacuum in one's ability to deal effectively and efficiently with marital and sexual problems.

Oncology

Non-Invasive Scanning Techniques for Gynecologic Cancer

Charles H. Nash, III, M.D.
David S. Alberts, M.D.

Editor:
David Alberts, M.D.

Computed Tomography Scanning

The increasing availability, precision, and accuracy of computed tomography (CT) scanning makes this a potentially important non-invasive diagnostic technique for the measurement of gynecologic tumor masses.[5,6,8] The indications for and cost-effectiveness of this procedure are still under investigation.[2] Scans are performed at the University of Arizona with a third-generation CT scanner which is able to scan a body slice in 4.8 seconds, thus eliminating movement artifact due to breathing and peristalsis. Oral Gastrographin® and intravenous Renographin® are used to outline the gastrointestinal and urinary tracts, respectively. A high-quality scan requires 1-2 hours, during which the patient must be relatively motionless. Measurements of tumor size can be readily made with this technique, and, as with sonography, directed biopsies can be performed with CT control to assure biopsy of the correct structure.

Discussion

The decision regarding which test to use to follow the course of cancer in a given patient must be made on an individual basis. Alberts et al.[1] found that radionuclide scanning with indium-111-bleomycin and pelvic sonography were complementary procedures for evaluating pelvic tumors in patients with endometrial and ovarian carcinoma. The combination of these procedures yielded a high degree of accuracy in surgically confirmed cases. It was suggested that both ultrasound and In^{111}-bleomycin scanning be used for initial diagnosis. Then, if the sonogram adequately depicted the tumor present, it alone could be used to follow the patient. If the

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sonogram was inadequate the In^{111}-bleomycin scan could be used for follow-up tumor evaluation.

We have recently carried out a prospective study to compare sonography with CT scanning to identify and measure gynecologic tumors.[5] In 15 patients with surgical documentation of tumor size and location, the combination of CT and sonography accurately measured disease in all cases. There were two false negative sonograms and two false negative CT scans. There were no false positive scans in the study. We concluded that sonography is as accurate as CT scanning in the measurement of gynecologic tumors.

Considering the cost of a CT scan (which is roughly four times as expensive as a comparable sonogram) and the time requirement, we believe the B-mode ultrasound to be the more efficacious technique for serial tumor measurement. The combination of tests can provide added diagnostic confidence, particularly when the clinician suspects tumor but the initial scanning procedure is inconclusive or negative. Another interesting finding is that the CT scan appears to be more accurate in defining uterine wall pathology, whereas the sonogram is useful mainly for defining uterine size and contour. We plan to use the sonogram as the initial test for patients with gynecologic cancer, although newer techniques, such as Co^{57}-bleomycin whole body scanning, are being studied.

A major problem in the management of gynecologic malignancy is the difficulty of early identification and subsequent measurement of pelvic tumors. Once treatment is initiated, there are relatively few non-invasive diagnostic tools available to objectively quantitate change in tumor size, and physical examination may frequently be misleading. This report summarizes the status of several non-invasive scanning techniques used for evaluating pelvic tumor masses at the University of Arizona and other medical centers.

Pelvic Ultrasonography

Since the early 1960's pelvic ultrasonography has been a valuable test routinely employed for both obstetrical and gynecologic diagnosis. It has the advantages of being rapid, accurate, and relatively inexpensive. Obstetricians have used it to determine fetal gestational age, screen for birth defects, and study pelvic anatomy. The B-mode sonogram can also accurately detect pelvic tumors, and with serial measurements it can be used to follow the progress of tumors in response to surgery, radiation therapy, and chemotherapy. The consistency of a mass (i.e., the solid, semi-solid, or cystic nature) can be determined, and relatively precise measurements can be made directly from the sonogram. The sonogram can identify pelvic or retroperitoneal lymphadenopathy, as well as hepatic, splenic, or intra-renal masses.

There are a few problems in obtaining a high-quality sonogram, however. A full urinary bladder is necessary to assure an accurate study and to localize masses or anatomic structures. When urinary incontinence is a problem, a temporary catheter can be used to fill the bladder. Also, sonograms are frequently difficult to interpret in patients with extensive adhesions or bowel gas because multiple echo densities will be seen.

Currently at the University of Arizona we perform B-mode sonograms of the abdomen and pelvis with gray-scale imaging techniques in longitudinal and transverse directions. A typical scan takes about 30-45 minutes to perform. With the baseline or pretreatment scan, masses are localized and their size is recorded; thereafter, sonograms are obtained serially to evaluate changes in tumor size following chemotherapy or radiation therapy. The performance of directed biopsy of pelvic masses under sonographic guidance may increase the safety of this procedure. For patients with inconclusive sonogram results other procedures are now available.

Cobalt-57-Bleomycin Scanning

Newer radiopharmaceutical agents have added another dimension to the non-invasive evaluation of gynecologic tumor masses.[3,4] These agents are tumor specific (i.e., they are selectively taken up by tumors). Cobalt-57-labeled bleomycin is one such radiopharmaceutical now available for tumor scanning.[7,9] One to 1.5 millicuries of Co^{57}-bleomycin is administered intravenously, and scanning is performed after 6, 24, and 48 hours. Since the radionuclide is immediately taken up by the kidneys, bladder wall, and liver, the best tumor imaging is achieved at 48 hours when tumor-to-plasma ratios are highest and most of the radionuclide has been excreted into the urine. To date, there is not enough experience with this scanning technique to determine its role specifically for the localization and measurement of gynecologic tumors; however, we are currently evaluating this at the University of Arizona Cancer Center in a study comparing the efficacy of Co^{57}-bleomycin and ultrasonography for pelvic tumor evaluation.

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Pediatrics

Renal Transplantation in Children

The Phoenix Experience Part I

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Melvin L. Cohen, M.D.

Since the early 1960's when the development of effective methods of immunosuppression made renal transplantation a feasible treatment modality for end stage renal disease (ESRD), the field has grown and developed markedly. It is the purpose of this paper to describe some of the basic aspects of renal transplantation as it applies to the pediatric age range and to relate the experience and results seen with this procedure in Phoenix.

Incidence of Disease and Criteria for Acceptability

It has been estimated in several studies that two to three children over one year of age per million general population enter ESRD each year. As of about one year ago there had been approximately 20,000 transplantations performed in the United States of which around 1700 had been in patients under 18 years of age.

The incidence of ESRD seen in Phoenix is shown in Table 1. Drawing from the population of northern Arizona, the total number is within the expected range. However, when this is subdivided, while the numbers are small, there seems to be a disproportionately high frequency among the Mexican-American population and particularly among the American Indian where the expected incidence is 1.5 to 2.3 and there were actually six patients seen. Renal transplantation in children was begun in Phoenix in 1972 and since then there have been 17 transplantations performed in 14 children who ranged in age from 7 to 15 at the time of surgery.

Transplantation is now preferred to dialysis for treatment of children with ESRD by all centers. Pediatric patients are not generally accepted for chronic dialysis unless they are candidates for future transplantation. In some series, particularly in Europe, there has been a slightly better survival in dialysis patients over transplant recipients. However, the quality of life is so much better after successful transplantation the procedure is felt to be warranted. Only by transplantation are children offered a chance to reverse such dialysis problems as maintenance of vascular access, dietary restrictions, anemia, and the marked abnormalities in emotional, intellectual and social maturation. Dialysis is thus viewed as an expedient tool to maintain life and rehabilitate children for transplantation.

TABLE 1
NORTHERN ARIZONA PEDIATRIC ESRD
(1971-1978)

	Population	Expected	Actual
Total	1,645,000	23 - 34	26
White	1,225,000	17 - 25	12
Mex.-American	250,000	3.5 - 5.3	7
Indian	110,000	1.5 - 2.3	6
Black	50,000	.7 - 1.0	1

There are actually very few specific contraindications to transplantation. At most centers patients with significant mental retardation are not considered candidates and it has been noted that even children with mild degrees of retardation do not seem to withstand the rigors of the procedure as well. Patients with malignancies are generally poor candidates. In the pediatric age range bilateral Wilm's tumor is the most common problem encountered. While some of these patients have been successfully transplanted, in general, their survival has been poor. There seems to be an increased risk of succumbing to generalized infections which is thought to

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TABLE 2

DISEASES LEADING TO TRANSPLANTATION:

Glomerulonephritis

Obstructive uropathy — pyelonephritis

Congenital hypo/dysplasia

Cystinosis, Alports, polycystic, H-S nephritis, hemolytic uremic, renal tumors . . .

be related to the antecedent chemotherapy and radiation in combination with the transplant immunosuppression.

Patients with active infections are at risk for dissemination if transplantation is performed. However, these children are candidates for a trial of dialysis if irradication of the infection is a possibility. In those children with multisystem disease it has to be considered whether the involvement of the other organ systems precludes transplantation. There is only one metabolic disease, oxalosis, that seems incompatible with transplantation. These patients have recurrent stones in the graft with subsequent poor survival rates.

In addition, transplantation in the very young child, particularly under one year of age, has met with limited success. While the technical problems have by and large been overcome, the infants have generally died, usually from overwhelming infections. It appears that the very young patient has an extremely narrow range of effective yet reasonably safe immunosuppression.

In Phoenix, of the patients who entered ESRD, only two were not considered transplant candidates; one who had profound mental retardation, and the other severely handicapped with a myelomeningocele for whom the parents refused transplantation.

Diseases Leading to Transplantation

The diseases that lead to transplantation vary somewhat in pediatrics from that seen in an adult population. In large series the proportion of children with glomerulonephritis is less with a predictably larger percentage of patients with obstructive and congenital dysplasias. In most major centers there are about equal numbers of the first three categories in Table 2 which combined make up most of the cases. The last category of renal diseases is less common.

The diseases seen in the children transplanted in Phoenix are shown in Table 3, with four patients having glomerulonephritis and ten falling into the congenital-hereditary category (including the obstructive uropathies).

Histocompatibility Testing

Histocompatibility has evolved into a complex and rapidly changing field. At present, criteria vary somewhat according to whether one is dealing with a live-related or cadaver donor situation. There are basically three components in general use. The first is ABO typing. The antigens that determine ABO are also found in kidney tissue so these must be compatible. The Rh system on the other hand does not appear to be of major importance.

TABLE 3

PHOENIX EXPERIENCE:		
Acquired		4
Rapidly Progressive GN	3	
Hypocomplemententemic GN	1	
Congenital/Hereditary		10
Obstructive Pyelonephritis	2	
Hypoplastic	2	
Medullary Cystic Disease	2	
Cystinosis	2	
Alport's Syndrome	2	

The crossmatch is done in order to detect the presence of preformed cytotoxic antibodies in the recipient's serum. As such, donor lymphocytes are incubated with recipient serum and evidence of lymphocytotoxicity looked for. A positive crossmatch is a contraindication to using that kidney for transplantation because a hyperacute rejection is likely to occur.

The third major area in transplant compatibility is the HLA or human leukocyte antigen system. At present there are two main components, the SD or serologically determined antigens and the LD or lymphocyte determined antigens, which are defined by a technique known as the MLC or mixed lymphocyte culture. The locus for this system is on the sixth chromosome with four areas currently detected and identified as A thru D. The A and B series have been the ones most studied; the C is less well defined and not yet in routine use. Every person has a pair of alleles for each of these areas, one inherited from each parent. The set of four from one parent is then referred to as a haplotype.

In typing the SD antigens, sera have been used that were initially prepared by taking serum from multiparous females. These women often have antibodies in their serum that have resulted from exposure to antigens on fetal lymphocytes that come from the father and are not shared by the mother. By correlating results with serums obtained from many researchers worldwide many typing sera have been defined. Nevertheless, these are all defined only on an operational basis and newer ones are being delineated and older ones modified continually. With this and other methods there are now about 20 antigens defined at each of the A and B loci.

Therefore, when a donor or recipient is typed, four antigens are usually elucidated. On occasion, less are found either because an individual has an untypable antigen or is homozygous at one of the sites. By comparing the donor and recipient antigens the match can be graded. One of the most widely used systems is that of Terasaki as shown in Table 4. Because of the shared haplotype, parent-child situations are generally two antigen mismatches unless the parents happen to share the antigen. In sibling pairs there is the statistical probability of a four antigen, or A match, 25% of the time. Transplants between these pairs are the most successful with survival rates close to 90% and thus represents the optimal situation short of an identical twin.

TABLE 4
TERASAKI'S MATCH GRADING SYSTEM:

A = No Ag difference
B = No donor Ag mismatch
Fewer detected in donor
C = 1 donor Ag mismatch
D = 2 donor Ag mismatch
E = 3 or 4 donor Ag mismatch
F = Positive crossmatch or
ABO incompatibility

The other part of the HLA system is the D locus which is defined by the mixed lymphocyte culture. Lymphocytes from the donor are first inactivated with an agent such as Mitomycin C and then mixed with recipient lymphocytes and incubated. The donor cells will cause varying degrees of stimulation to the recipient cells resulting in blast formation and uptake of the added tritiated thymidine in an amount dependent upon the degree of antigenic difference between the cell lines. By measuring this uptake an index of stimulation can be derived. It has been noted that in most A matches the lymphocytes do not stimulate each other, while in less well matched pairs, varying degrees of stimulation occur. This is felt by some to correlate with the likelihood of graft loss from rejection. However, this is still debatable and the exact role of the MLC in graft matching remains to be determined. At present the test takes several days to perform making it impractical for cadaver donor situations.

While SD typing is obviously useful in live related transplants, its role in cadaver grafts is not clear. Some more recent series have shown improved survival with antigen matching of cadaver donors but this is controversial. Therefore, the only criteria generally used for accepting a cadaver match is ABO compatability and a negative crossmatch. However, some centers are now attempting to wait for two or better antigen matches before transplanting.

Kidney Preservation

There are basically two methods of cadaver graft preservation in use. One is simple hypothermic storage in which the kidney is flushed with a chilled solution and then kept at 2 to 4 degrees centigrade until transplant. This allows an average time of 5 hours with maximum times generally felt to be up to 18 hours, although most recently some workers have transplanted grafts successfully after periods of as long as 30 hours. The solution used is generally of intracellular composition, such as Collin's solution, which is felt to minimize cellular damage due to swelling. The other method is continuous pulsatile perfusion in which oxygenated cryoprecipitated plasma is pumped through the hypothermic graft. This gives longer usable times, some say up to three days, but the graft is generally used in about 30 hours. It is also advocated as a method of preservation by some because viability of the kidney can be assessed by its perfusion characteristics. However, the use of pulsatile perfusion is disputed because others feel that it actually damages the kidney — the so-called perfusion nephropathy. In Phoenix, pulsatile perfusion was used only once in one of the early cases, the subsequent cadaver grafts have been maintained by simple hypothermic storage.

In either method it is felt that the duration of warm ischemia time is the most important factor in determining how well the graft will function in the immediate postoperative period. Cadaver grafts tend to have varying degrees and durations of acute tubular necrosis following transplantation and of course it is important to find ways of keeping this to a minimum.

Patient Preparation

In preparing a patient for transplantation there have been several operations advocated for improving graft survival. Thymectomy was formerly tried to presumably cut down on the patient's immune response to the foreign antigens but studies did not bear this out. Since there was significant morbidity and mortality associated with the procedure, it is no longer recommended.

Splenectomy has also been used in an attempt to gain an immunologic improvement and to take advantage of the post-splenectomy leukocytosis to allow better tolerance of the azathioprine used for immunosuppression. While the operation is still indicated in patients with hypersplenism and leukopenia, its general use is now being reconsidered since the average patient has not been shown to have improved graft survival and there are several reports of the increased risk of sepsis in the splenectomized patient. In Phoenix, only two patients have needed splenectomies due to leukopenia prior to transplantation and both had good responses in their white counts which allowed full use of the azathioprine.

Bilateral nephrectomy was formerly routinely used in preparing a child for transplantation. However, this is changing also. The benefits of not having the patient in the anephric state, such as preservation of erythropioetic-stimulating factor and vitamin D metabolism, as well as the significant morbidity and mortality of the operation, have resulted in most centers doing bilateral nephrectomies only for specific indications. Patients who have obstructive uropathies benefit from nephrectomy because of the problems of infection with immunosuppression. Hypertension that persists at dry weight after dialysis, particularly if it can be associated with elevated renins, is a definite indication for the operation. Some people feel that diseases that are known to recur in the graft such as the membranoproliferative and rapidly progressive glomerulonephritides are helped by bilateral nephrectomy as well as the antiglomerular basement membrane diseases such as Goodpasture's. In addition, if there is significant proteinuria with the nephrotic syndrome, nephrectomy may be indicated. In Phoenix, 5 patients have had bilateral nephrectomies before transplant; 2 with obstructive pyelonephritis and 3 with glomerulonephritis, of which 2 also had problems with hypertension.

(*To be continued*)

Psychiatric Disorders

The "What and Why" of Family Therapy

Muriel Sieh, M.S.W.

The basic approach of family therapy is that instead of one person being selected as the patient, the family itself is seen as having a problem. All important people in the environment are involved in treatment; thereby reducing the undermining of treatment. If all members of the family are not seen, only an individual, he has to return to the family environment and may find it very hard to adjust if other members of the family are dysfunctional; whereas if the whole family is treated, maladaptive behavior has a chance for correction. All members of the family benefit and can use what they learned for the rest of their lives, usually preventing the next generation from having to go into therapy. As we are all aware, when one sick member of the family is treated effectively, very often another member of the family takes on a symptomology picture. Family therapy may prevent this. Observing and reflecting a family member responding to a nonverbal message is a helpful technique as most families are not consciously aware of this mechanism operating. Often family members' participation are ambivalent for they want to and need to communicate and yet may be fearful of the results.

Fear of being hurt, rejected, fear of intimacy, not being able to tolerate differences in members of the family often are at the root of family conflict; this can be changed with improved communication.

Family therapy offers an opportunity for normal maturation with competence in interpersonal relationships. Encouragement is given for self-expression which improves self-worth; all members of the family are taught to respect one another's rights. The family is given help toward emancipation of each child and given understanding toward appropriate steps in their development. Families need help in becoming flexible to adjust to the needs of each family member. Family rules are made clear to each member; arbitrary rules are reduced; decisions about how the rules will be enforced are gone into; authority is encouraged as a benign, positive influence. Floundering, indecisiveness and impotency of family members then disappear. Provacative behavior or remarks can be interpreted; nonverbal communication can be pointed out and family members helped to assume responsibility for their behavior. Sibling competitiveness can be reduced as family alliances and the reasons for their existence are pointed out.

The family sessions provide an atmosphere in which members can express their ideas, hopes and feelings on neutral ground. The therapist is constantly observing, interpreting and defining problem areas as they occur in the sessions. The family therapist initiates a high degree of leadership, while at the same time allowing the family to

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determine their own solutions. The therapist may point out alternative solutions; the therapist requires a keen awareness and ability to rapidly appraise the meaning of interactions and to use them effectively. Active involvement enables the therapist to interpret some of the behaviors and prevent evasion of painful subjects. The therapist needs to assume a strong role to help a disorganized family gain control and establish a course of action that will help the family achieve its goals. Confidence is given to the family members that they have the ability to make changes provided they are motivated to do so.

Although most family therapists insist that sessions include all members of the family an open door flexible policy is sometimes helpful. Essentially the here and now is what is considered. Family members consist of children as young as three and significant others can be included such as grandparents. A physician who is treating a medical condition of a family can be invited to sessions with the permission of the family. Family sessions are held in my office or in the family's home depending upon what seems best at the time. When a child is referred for learning or behavioral problems visits to observe the child in the classroom, on the playground and in the lunch room are helpful. Time is spent with the teachers regarding the child's peer adjustment, academic strengths and weaknesses, his emotional problems and responses to structure and authority.

Referrals include a wide range of symptoms such as: acting out — aggressive behavior, withdrawn behavior, passive-aggressive behavior, insomnia, nightmares, fire setting, stealing, incorrigible behavior, adolescent rebellion, sexual acting out, use of drugs and alcohol, underachievement, learning disabilities, neurological deficits, headaches, ulcer, colitis, sibling adjustment, nonattendance at school, anxiety and depressive reactions, allergies, obesity, anorexia nervosa, poor diabetic control and poor self-image. In contrast to individual therapy, family therapy requires much more in the way of astuteness, energy, and the ability to cope with a high degree of hostility as the family interacts. Often there are five to eight people in the family and the therapist must be aware of all of the nonverbal as well as verbal communication among family members as well as toward the therapist. The therapist needs to be experienced in intervening during situations involving a great deal of conflict. The therapist has to be comfortable and have the capacity to be an active therapeutic agent. The therapist is responsible for an environment that produces change. Often the family struggles to retain the old balance. Treatment of the whole family is based upon the assumption that the designated patient really only carries symptoms of family conflict. The patient may react more than anyone else to the stress within the family.

Hospitalization and placement outside of home usually are avoided not only because of the cost but because removal of a person from his home, school or job make the re-entrance process difficult.

Radiology

Case of the Month #35

Jonathan M. Levy, M.D.
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Paul W. Nykamp, M.D.
Cary J. Stegman, M.D.

A 59-year-old man had a right radical nephrectomy for hypernephroma. Post-operatively, he had a severe and prolonged bout of hiccoughing. During the hiccoughing episode, he had the sudden onset of painless hematemesis. A left gastric arteriorgram is shown in Figures 1A and B.

What is the diagnosis?
What is the appropriate treatment?
What is the prognosis?

Continued on page 742

From: Departments of Diagnostic Radiology (Drs. Levy, Nykamp and Stegman) and Gastroenterology (Dr. Lewkowitz), Scottsdale Memorial Hospital, 7400 E. Osborn Road, Scottsdale, AZ 85251.

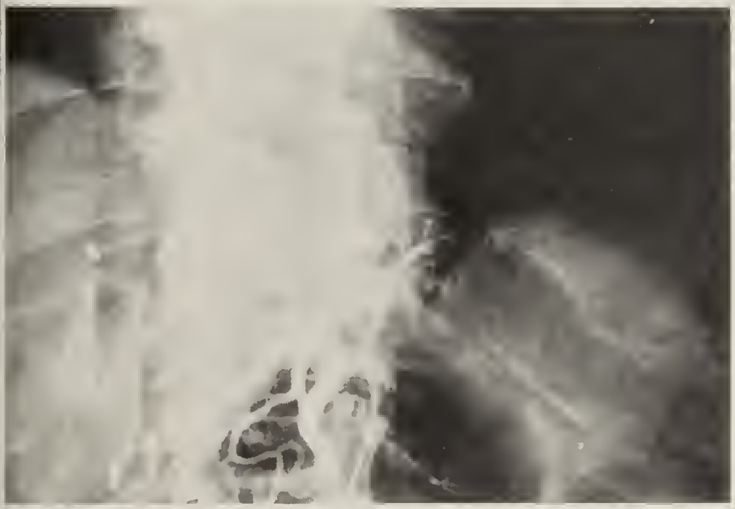

FIGURE 1A
Arterial phase of left gastric arteriogram.

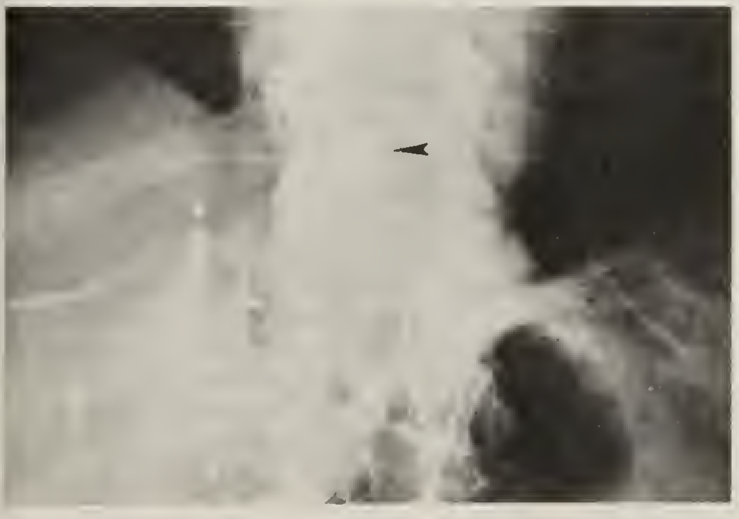

FIGURE 1B
Venous phase. Note "blush" of extravasated contrast [arrow].

Special Articles

Medicine in Mexico

XII. Folk Medicine (*Conclusion of Series*)

Charles C. Daschbach
Arthur A. Arena

Cuando el tecolote canta,
El indio muere.
No sera verdad —
Pero sucede.

(When the owl hoots,
The Indian expires.
It cannot be true —
Yet it transpires.)

Traditional beliefs about health, illness, and death play a significant and intricate role in Mexican health care. This spectrum varies from an urbanized group of customs which integrates folk and modern Western medicine, to the highly spiritual practices of the rural indigenous population. Many comprehensive studies have addressed the colorful facets of home remedies and the many functions of Mexican folk healers, usually avoiding the less easily understood philosophies and complex impact of traditional medicine in Mexico. Sociological generalizations often produce contradictions in the literature, and personal experiences lead academic investigators and medical providers to a cautious approach when "interpreting" the beliefs of a particular patient. Nevertheless, certain philosophical elements are prevalent enough to serve as an introduction to most Mexican folk health practices.

A majority of the traditional models of disease in Latin America utilize a "concept of balance" of the individual's welfare which can be displaced by spiritual causes (God, the saints, evil spirits and witchcraft), natural causes (usually from eating the wrong foods or hot/cold imbalances), or by both (strong emotional experiences). This theory of causality is often the basis for both the classification of the disease

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and for its treatment, and usually does not embrace systemic views of the body's structure and function. It is also fair to generalize that most Mexican folk traditions are passed on through maternal instruction, and that they focus primarily upon the woman's fertility cycle and early child rearing practices.

Medicinal plants and herbs also play a central part in folk curing strategies. The rich heritage of therapeutic plants in Mesoamerica, coupled with the current use of these plants among a large proportion of the population, has attracted the interest of both social scientists and pharmaceutical researchers. It was in the jungles of Chiapas that the first synthetic steroid precursor was isolated. Today, peyote remains singular among hallucinogenic drugs, as the only North American plant used in religious ceremonies from before written history and still retained as a current integral part of the religion of New World culture. All throughout Mexico, herb vendors stand on street corners selling leaves, powdered petals, and roots for any illness. The recently established Mexican Institute of Medicinal Plants (IMEPLAM) has begun an interdisciplinary definitive study of the pharmacognosy of Mexican plants. The Institute's main thrust involves the public health impact of folk plants with cardiovascular, antiparasitic, and antidiabetic properties.

antidiabetic properties.

While many persons serve as health providers in the traditional folk model as midwives (*parteras*), herbal specialists (*albolarios*) and massagers (*sobadoras*), it is the *curandero* who delivers most of the primary care. *Curanderos* receive no formal medical training, but usually have served a long apprenticeship, and do not earn their living by their practice. Two necessary characteristics for their role are their longevity as residents in their community and their piety. While the *curanderos'* knowledge, intuition, and humanistic approach are important, their religious conduct is their chief virtue in earning respect from their patients. While their reputations are dependent upon their degree of success, they are not directly culpable for their failures because the populace accepts the role of God's will in matters of health and welfare.

The *curandero* has been described by many names — witch doctor, sorcerer, naturopath — but his or her role is primarily that of a psychotherapist. Remedial emotional encounters are often provided for the patient's manifest conflicts. As in today's holistic health movement, this folk psychiatric role recognizes, and is predicated upon, the strong bond between the spiritual and natural causes and the emotional and corporal effects of health and illness.

Often the patient will refer to the *curandero* for specific disease entities which are believed to be endemic among Mexicans or Latin Americans only, and not shared by North Americans or Europeans. *Caida de la mollera* (fallen fontanels), *espanto* (fright), *empacho* (intestinal blockage), *coraje* (rage), *mal de ojo* (evil eye), *encono* (spiritual wound complication), and *embrujada* (bewitchment) are examples which not only define the medical problem and its origin, but also designate the treatment and the particular class of folk healer to be sought.

Susto, or magical fright, for instance is very common in Mexico, both in urban and rural areas, affecting all socioeconomic levels. Its onset is usually ascribed to a disturbing or destabilizing experience (an unexpected fall, seeing a car accident, a dog's bark) and part of the "self" becomes separated from the body. In its early stages this spiritual loss is accompanied by stomach pains, diarrhea, fever, and vomiting. The *curandero* prescribes special herbs and foods to prepare the patient for the curing ceremony. An elaborate ritual or a simple spirit "recalling" then takes place depending upon the nature of the event which caused the spiritual loss. The anxiety of the patient and his family is considerable at this point of the cure. If an acute *susto* is not cured, a chronic *susto* may develop with the patient gradually losing appetite, desire for social activity, and his spiritual will to live. Thus the *curandero* and the patient are involved in a highly complex psychotherapeutic relationship in a disease which can prove fatal. For the healer and the afflicted both remember the verse from their childhood . . .

> "It cannot be true —
> Yet it transpires."

Collaborative Teaching Efforts Between a Medical and Nursing College

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ABSTRACT

Traditionally, medical school curricula have provided students with little knowledge of the capabilities and potential contributions of colleagues in other health fields. This gap is particularly evident between physicians and nurses.[1,7] Each discipline has unique expertise and knowledge crucial to patient care and to student education. This paper describes four teaching efforts instituted at the University of Arizona, Colleges of Medicine and Nursing, which utilize interdisciplinary instructional methods and provide a foundation for future collaborative efforts.

The typical medical school curriculum provides students with little experience or knowledge of the capabilities and potential contributions of colleagues in other disciplines. Rather, medical students have traditionally been oriented to function independently as self-reliant professionals who gather their own data and make their own decisions. The need for reevaluating the professional relationship between physicians and nurses has been well documented.[1,7] Each discipline has unique expertise, skill and knowledge crucial to patient care and student education; yet reports of joint teaching and research efforts between medical and nursing faculties are rare. At the University of Arizona, interdisciplinary teaching efforts between the College of Medicine and College of Nursing with their distinct administrative staffs have been limited but a new interest in such activities is emerging. This paper describes four instructional programs which offer a foundation for future collaborative efforts.

Family Nurse Practitioner Program

The Family Nurse Practitioner Program is a one-year course designed to prepare registered nurses, who have at least two

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years post-graduate clinical experience, for expanded roles within the area of Family Practice. The program is administered by a member of the faculty of the College of Nursing and a member of the faculty of the College of Medicine acting as co-directors. Guest physicians from both the community and the academic faculty contribute to the didactic and clinical aspects of the program and thus acquire some concept of nurse practitioners as students and as professionals. Brief clinical rotations during the first six months of the program may bring nurse practitioner students into clinical settings such as emergency rooms, model family practice centers, HMO's and neighborhood health centers. During the last six months of the program, each nurse practitioner spends full time in a single clinical practice. In these settings, the nurse practitioners become actively involved in many aspects of patient care and interact with medical students as part of a health-care team.

Nurse Practitioners as Teachers Of Medical Students

In 1976, as part of a major revision in the teaching of Physical Diagnosis at the College of Medicine, Family Nurse Practitioners were made part of the instructional team. The new course arose, in part, because of past course difficulties due to uneven teaching by physician preceptors, and to shortages of faculty, patients and facilities. Recruitment of interested and energetic medical faculty was difficult because this type of teaching offered few academic rewards. It was believed that if the basic course could be effectively taught by other competent clinicians, medical faculty time could be more efficiently used.

The new Physical Diagnosis course utilized Nurse Practitioners as key members of the instructional team. A teaching pair was composed of a Family Nurse Practitioner student at the College of Nursing and a certified Family Nurse Practitioner. All of the Nurse Practitioner students and most of the certified Nurse Practitioners learned their physical examination skills from the same physician who directed the medical student course. That physician had observed each of the Nurse Practitioners performing a physical examination and had certified their competence. Physicians from the College of Medicine functioned in an advisory capacity to the nurses but had no direct responsibility for teaching medical students. The course was successful and the students learned to perform a thorough physical exam.[8]

Patient Care Skills Workshop

After the success of the joint ventures described above, other collaborative efforts were sought. A voluntary, one-day workshop for first-year medical students was offered to introduce knowledge of selected patient-care skills to pre-clinical students. Typically, medical students enter clinical clerkships with limited knowledge of such patient-care skills as catheterization and aseptic technique; yet they are often expected to demonstrate proficiency in these techniques.[9] A structured and uniform instructional method was developed so that the teaching of these skills would not be relegated to personnel available on the clinical unit. It was hoped that the new program would provide medical students with practice in the actual performance of a preselected set of patient-care skills.

Faculty from the College of Nursing led a one-day workshop providing medical students with instruction in the following areas: 1) male and female catheterization, 2) clean-catch urine collection, 3) dressing change, 4) suctioning and tracheostomy care, 5) intravenous therapy and venipuncture, 6) intramuscular, intradermal, and subcutaneous injections, 7) operating room procedures including scrubbing, gowning, and gloving, and 8) cardiopulmonary resuscitation. The skills selected were basic to patient care and could be readily demonstrated by the faculty and practiced by students on plastic models, fellow classmates and/or self.

The workshop was divided into one-hour periods during which small groups of students rotated through each skill area. For each skill, the nurse instructor reviewed with the students the pertinent physiology and anatomy necessary for competent execution of the skill. The instructor demonstrated the technique on a plastic model. Students were then given the opportunity to practice each skill on the model until they felt comfortable with the equipment and with their technique. In skill areas considered to be non-injurious (i.e., clean-catch urine collection; dressing change; intradermal, subcutaneous, intramuscular, and intravenous injections), students were permitted to practice their technique on fellow classmates or themselves.

The workshop demonstrated that basic patient-care skills can be taught successfully to pre-clinical medical students by nursing faculty. It is impossible, as a result of the project, to guarantee a student's long-term proficiency in these skills. However, each student was provided with the basic knowledge and rationale for common clinical procedures which, with increased practice, may serve as a foundation for future learning.

Performance Evaluation of Graduating Nurse Practitioners

In past years, a graduating Nurse Practitioner was evaluated via a short-answer examination which assessed factual knowledge, a questionnaire completed by the physician preceptor which subjectively assessed skills and attitudes, and by direct physician observation as the Nurse Practitioner performed a complete physical examination on an unknown patient. Assessment criteria were not standardized and inter-rater reliability between preceptors was not determined.

In 1977, in an effort to evaluate objectively the physical examination skills of graduating Nurse Practitioners, the College of Nursing agreed to pilot test an evaluation technique developed by the College of Medicine. Two asymptomatic adults were recruited and trained to function as non-physician Practical Instructors (PIs) in the dual role of patient and evaluator of a complete physical examination. The items to be included in the examination were agreed upon by the Director of the Family Nurse Practitioner program and faculty from the Department of Internal Medicine and were formalized into an objective checklist.

For their final evaluation, each Family Nurse Practitioner student performed a complete physical examination on a Practical Instructor. At the completion of the student's examination, the PI switched roles and became the "instructor," evaluating the student's performance via the checklist. In areas where the student performed inadequately, the PI reviewed the proper examination technique, helped the student organize the examination into a smooth and efficient routine, and offered instruction in a way that encouraged patient cooperation and enhanced patient comfort. This work has been described previously.[10] Based on the success of this pilot project, the evaluation technique was fully implemented at the College of Medicine.[11]

Conclusion

The delivery of comprehensive health care services is increasingly a team task. By utilizing all the resources available at both a college of Medicine and Nursing, collaborative teaching programs can be implemented which enhance student's education. Increased communication between physicians and nurses fosters an appreciation of the expertise that each member of the health team can contribute to quality care.

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Radiology Case of the Month #35

Cont. from page 738

Mallory-Weiss Syndrome

During the capillary phase of the left gastric arteriogram, a large "blush" of extravasated contrast material can be seen in the region of the gastroesophageal junction (Fig. 1B). This finding, when related to the patient's history, confirms the presence of a Mallory-Weiss tear as the cause of the bleeding. Bleeding from esophageal varices is more diffuse than that produced by Mallory-Weiss syndrome, and the arteriogram may not show extravasated contrast. No varices were seen on the venous phase of this patient's arteriogram. Spontaneous rupture of the esophagus (Boerhaave's syndrome) almost never produces significant bleeding, and pain is invariably present. Our patient was treated by gelfoam embolization of the left gastric artery, and had an uneventful recovery.

DISCUSSION

In 1929, Mallory and Weiss described linear, nonperforating lacerations of the proximal gastric mucosa in patients presenting with upper GI bleeding after episodes of severe vomiting. This constitutes the Mallory-Weiss syndrome. A majority of patients have a history of alcohol ingestion, but identical lesions have been described due to external cardiac massage, coughing, straining at stool, heavy lifting, *hiccoughing* and after blunt abdominal trauma. The laceration is usually on the right lateral wall of the stomach at the gastroesophageal junction. Approximately 25 percent of the lacerations extend into the lower esophagus. The pathogenesis of the lesion seems to be an increase in gastric fundal pressure secondary to straining against a closed glottis.

Diagnosis of Mallory-Weiss syndrome depends upon early endoscopy. The introduction of fiberoptic endoscopy has allowed rapid determination of the site of upper GI bleeding in the majority of patients. Visualization of the entire upper GI tract should be attempted, since a significant number of patients have concomitant lesions. Barium upper GI series are almost invariably negative. Early reports indicated that patients with Mallory-Weiss syndrome often had a poor prognosis, but this has been refuted. Results of recent endoscopic studies show that 10-14 percent of acute upper GI bleeding is due to Mallory-Weiss syndrome, and that most occurrences are relatively mild. Patients usually respond to conservative therapy, and the mortality rate is presently less than 5 percent.

Treatment of Mallory-Weiss syndrome is conservative, with gastric lavage, antacids and replacement of blood loss if necessary. Patients who do not respond to these measures should have arteriography with Pitressin infusion into the left gastric artery. Embolization of the left gastric artery, as done in our patient, is a newer technique which rapidly controls the bleeding. Only when these methods have failed should surgery be contemplated.

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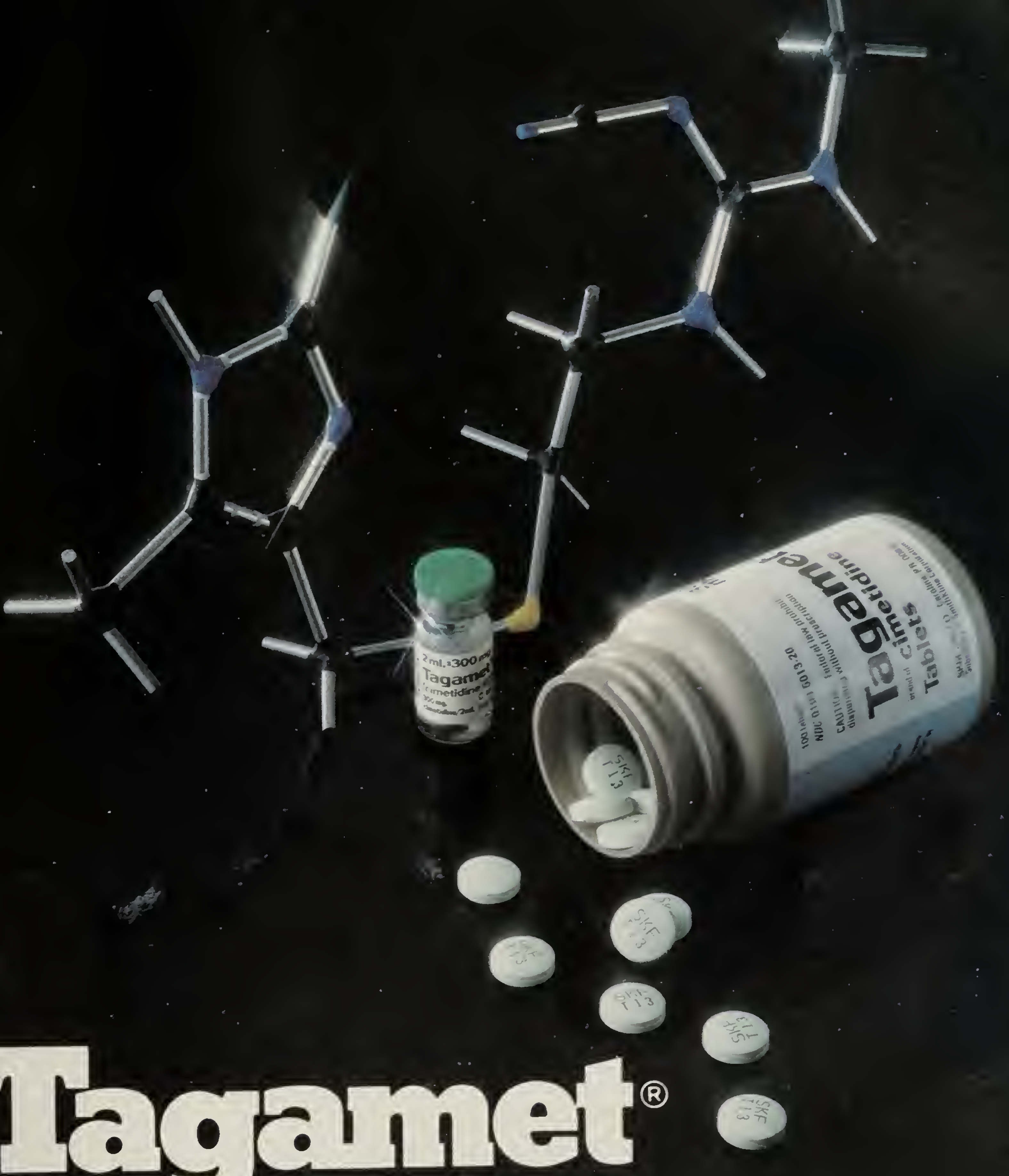

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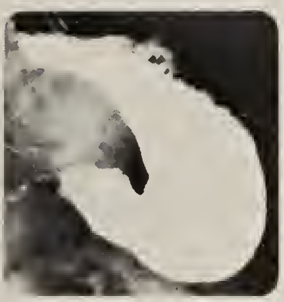
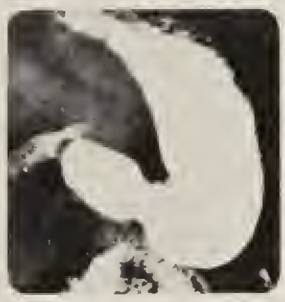


Pylorospasm has almost totally blocked passage of barium meal.



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For use in the treatment of infant colic (syrup).

Final classification of the less-than-effective indications requires further investigation.

CONTRAINDICATIONS: Obstructive uropathy (for example, bladder neck obstruction due to prostatic hypertrophy); obstructive disease of the gastrointestinal tract (as in achalasia, pyloroduodenal stenosis); paralytic ileus, intestinal atony of the elderly or debilitated patient; unstable cardiovascular status in acute hemorrhage; severe ulcerative colitis; toxic megacolon complicating ulcerative colitis; myasthenia gravis. WARNINGS. In the presence of a high environmental temperature, heat prostration can occur with drug use (fever and heat stroke due to decreased sweating). Diarrhea may be an early symptom of incomplete intestinal obstruction, especially in patients with ileostomy or colostomy. In this instance treatment with this drug would be inappropriate and possibly harmful. Bentyl may produce drowsiness or blurred vision. In this event, the patient should be warned not to engage in activities requiring mental alertness such as operating a motor vehicle or other machinery or perform hazardous work while taking this drug. PRECAUTIONS: Although studies have failed to demonstrate adverse effects of dicyclomine hydrochloride in glaucoma or in patients with prostatic hypertrophy, it should be prescribed with caution in patients known to have or suspected of having glaucoma or prostatic hypertrophy. Use with caution in patients with: autonomic neuropathy; hepatic or renal disease; ulcerative colitis—Large doses may suppress intestinal motility to the point of producing a paralytic ileus and the use of this drug may precipitate or aggravate the serious complication of toxic megacolon; hyperthyroidism, coronary heart disease, congestive heart failure, cardiac arrhythmias, and hypertension, hiatal hernia associated with reflux esophagitis since anticholinergic drugs may aggravate this condition.
It should be noted that the use of anticholinergic/antispasmodic drugs in the treatment of gastric ulcer may produce a delay in gastric emptying time and may complicate such therapy (antral stasis). Do not rely on the use of the drug in the presence of complication of biliary tract disease. Investigate any tachycardia before giving anticholinergic (atropine-like) drugs since they may increase the heart rate. With overdosage, a curare-like action may occur. ADVERSE REACTIONS: Anticholinergics/antispasmodics produce certain effects which may be physiologic or toxic depending upon the individual patient's response. The physician must delineate these. Adverse reactions may include xerostomia, urinary hesitancy and retention, blurred vision and tachycardia, palpitations; mydriasis; cycloplegia, increased ocular tension, loss of taste, headache, nervousness, drowsiness; weakness; dizziness, insomnia; nausea, vomiting, impotence, suppression of lactation, constipation; bloated feeling, severe allergic reaction or drug idiosyncrasies including anaphylaxis, urticaria and other dermal manifestations; some degree of mental confusion and/or excitement, especially in elderly persons; and decreased sweating. With the injectable form there may be a temporary sensation of lightheadedness and occasionally local irritation. DOSAGE AND ADMINISTRATION: Dosage must be adjusted to individual patient's needs.
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Measurement of Drug Levels in Clinical Practice

Kenneth A. Conrad, M.D.

It was first appreciated in the 1940's that the pharmacologic effects of a drug correlated more closely with the blood levels of that drug than with the dose of the drug administered. Recent development of assays for a number of frequently used drugs has provided the clinician with a means of monitoring therapy quantitatively, particularly when it is difficult to measure a therapeutic end point.

It is generally believed that drug response is determined by the amount of drug attached to the receptor responsible for the pharmacologic effect. For drugs which act reversibly the number of drug-receptor complexes, and therefore the magnitude of drug response, is proportional to the drug concentration in tissue water, which is in equilibrium with the drug in plasma. However, in some instances, drug effect does not relate to plasma drug level. The lack of correlation between drug level and effect should suggest the possibility of the presence of an active metabolite, the kinetics of which may be different from those of the active drug. For example, the hypotension from methyldopa persists at least 24 hours, whereas, the plasma half-life is less than 2 hours. An active metabolite, methylnorepinephrine, persists in the adrenergic neuron long after the parent drug has been eliminated.

Some drugs act non-reversibly, binding to receptors avidly and remaining there after plasma concentrations

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TABLE I

DRUG	USUAL THERAPEUTIC PLASMA CONCENTRATION
Digoxin	0.6 - 2.0 ng/ml
Lidocaine	1.2 - 6 μg/ml
Lithium	0.4 - 1.4 mEq/L
Phenobarbital	10 - 25 μg/ml
Phenytoin	10 - 20 μg/ml
Procainamide	4 - 8 μg/ml
Propranolol	10 - 200 ng/ml
Quinidine	2 -5 μg/ml
Salicylate	100 - 400 μg/ml
Theophylline	10 - 20 μg/ml

have disappeared. Minoxidil and reserpine act in this fashion. Drugs which alter enzyme activity, such as monoamine oxidase inhibitors and coumarin anticoagu-ants, may have effects which correlate poorly with plasma levels.

Furthermore, disease states or concurrent drug therapy can either increase or decrease the expected pharmacologic response to a given drug concentration at the receptor site. Patients who malabsorb vitamin K will have an exaggerated response to coumarin anticoagulants; patients who are treated with propranolol will need a larger dose of isoproterenol to produce a given degree of tachycardia. Thyrotoxicosis will reduce the effectiveness of digitalis in slowing the ventricular response to atrial fibrillation but may increase the likelihood of arrhythmias. Hypokalemia will increase the likelihood of arrhythmias at any given plasma concentration of digitalis. Phenytoin at levels of 10-20 μg/ml will reduce seizure frequency in most, but not all, patients. Pharmacotherapy of depression with imipramine or nortriptyline will apparently benefit most those patients with norepinephrine depression (the patient having a decreased turnover of norepinephrine in the central nervous system). Patients with reduced turnover of 5 hydroxy tryptamine as the biochemical basis for their depression will benefit from amitriptyline.

The clinician who is considering the measurement of plasma drug concentrations to guide therapy should recognize that alternative therapeutic objectives may be more easily measured and more relevant to the ultimate objective. This is the case for antihypertensive agents and vasopressors (blood pressure can be measured), anticoagulants (prothrombin time or parial thromboplastin time can be measured), diuretics (urine output can be measured), hypnotics, analgesics, hypoglycemic agents, and hormones.[1]

For the optimum benefit to be obtained from plasma concentration measurements there should be a wide variability in drug absorption, distribution, and elimination from individual to individual and the drug in question should have a narrow therapeutic index, i.e., the "toxic" level is not much higher than the "therapeutic" level. Tolerance should not occur. In addition, a sensitive and specific assay should be available, and the turnover time for this assay should not be excessive. Ideally, the pharmacokinetic parameters of the drug and the levels generally associated with efficacy and toxicity should be known. Some drugs in which plasma concentration determination are useful are listed in Table 1. There is a great deal of variability in the dose-effect relationship for most drugs. A major source of this variation is the alterability in dose-concentration which is determined by pharmacokinetic variables, which, if eliminated by the appropriate use of plasma concentration data, would in turn reduce the diversity in dose-effect.

Poor compliance with prescribed drug regimens has been documented on many occasions.[2,3] Neither physician estimates of patient reliability nor a patient's reports of his drug-taking actions are necessarily accurate. The consequences of poor compliance may be insignificant or potentially life-threatening. Enforced compliance as a result of hospitalization may produce drug toxicity if the attending physician does not realize that his patient was not complying with the recommended regimen. Failure of the prescribed medications to effect improvement in the non-compliant patient might cause the physician to change his diagnosis or therapy and thus jeopardize the patient. Better compliance may be achieved by simplifying the regimen and (perhaps) by thorough patient education concerning the disorder and its therapy.

The extent of drug absorption, especially that following oral administration, is another important variable in determining plasma drug concentration. The manufacturing process determines how rapidly a tablet will disintegrate and how fast dissolution will occur. Physiologic variables such as the rate of gastric emptying, production of gastric juice and gastrointestinal motility all may influence the rate and extent of absorption. Hepatic drug extraction greatly reduces the availability of some orally administered drugs, including meperedine and propranolol.

Drug distribution occurs rapidly into those tissues which are highly perfused (heart, brain, kidney, ulcer), but at equilibrium the extent of such distribution depends upon the tissue: blood partition ratio and the amount of tissue in question. The volume into which a drug apparently distributes (V_d) can be calculated by dividing the amount of drug in the body by the plasma concentration. The volume of distribution of a given drug depends upon the size of the patient, the extent of plasma protein binding of a drug (only unbound drug passes into tissues), and the nature of the drug. The calculated volume may be totally unrelated to any physiologic "volume." The volume of distribution of most drugs is between 8 and 700 liters (warfarin and digoxin respectively). Disorders such as uremia and hypoalbuminemia cause variation in protein binding of the drug. Usually the fraction of unbound drug increases, but the apparent V_d may either increase or decrease as a result. Drug effect will be enhanced by any factor which increases the amount of unbound drug in the plasma.

The final determinant of plasma drug concentration is drug elimination. Elimination is influenced by genetic factors,[4] by environmental factors such as cigarette smoking and environmental pollutants, by the clinical state of the patient, by concurrent drug therapy, and in some cases by the dose of the drug given. Reduced cardiac output and impaired renal and hepatic function all may serve to reduce drug clearance. Concurrent drug therapy may inhibit or stimulate drug metabolizing enzymes or alter protein binding.

For some drugs, including phenytoin, acetylsalicylic acid, and ethanol, drug metabolizing capacity is saturated by doses of drug within the "therapeutic" range. In these cases a given dosage increment of drug may result in a far greater increase in plasma drug concentration than expected. Such agents require considerable caution and more frequent measurement of plasma drug concentration.

When the physician initiates drug therapy with a drug for which plasma concentrations are useful guides, he should first decide what plasma concentration would be best. If the situation is urgent a loading dose may be given the size of which can be determined by using known average pharmacokinetic parameters:

$$\text{Loading dose (in mg)} = \frac{\text{Vd (in liters)} \times \text{C (in mg/L)}.}{\text{F oral (as a fraction)}}$$

In this equation F oral is the fraction of the dose available to the systemic circulation and C is the desired plasma concentration. Expected changes in drug half-life in a patient (as a result of renal or hepatic disease) will not alter the projected loading dose. If the situation is less urgent, one may simply begin the predicted maintenance dose. This has the advantage of reducing the possibility of toxicity from the loading dose. Toxicity might occur because of gastrointestinal irritation from a large oral dose or because of high plasma levels which may be seen immediately after a large intravenous dose of drug. The maintenance dose is calculated as follows:

$$\text{Maintenance dose (in mg)} = \frac{\text{C (in mg/L)} \times \text{T (in hrs)} \times \text{CL (in liters/hr.)}}{\text{F oral}}$$

$$= \frac{\text{C} \times \text{T} \times K_e\ (\text{in hrs.}^{1}) \times V_d\ (\text{in liters})}{\text{F oral}}$$

where $K_e = \frac{0.693}{t\,½}$, t½ is the drug half-life, Cl is drug clearance and T is dosing interval. The dosing interval should be less than or equal to the half-life of the drug. The equations described above assume that the drug in question follows first order kinetics (that is metabolizing capacity is not "saturated") in the range under consideration. It is also assumed that no major changes in protein binding are present. Changes in drug elimination which may exist in the patient as a result of renal, cardiac or hepatic dysfunction should be anticipated, and appropriate reductions in drug dose made for the anticipated decrease in drug clearance.

After the drug has been administered for a total of four or five half-lives, a plasma concentration should be obtained to see if the desired level has been achieved. Blood should be drawn immediately before the next dose, so that distribution will have occurred. If the prescribed concentration is much different (<70% or >150%) than that expected, an error in the drug assay or in drug administration should be considered. If these possibilities are excluded the patient may have unusual pharmacokinetics for the drug in question and it may be desirable to pursue this by administering a single intravenous and oral dose of the drug to measure V_d, K_e and Foral.

Recently, salivary drug concentration have been used in monitoring drug therapy.[5] For some drugs such as phenytoin the concentration in saliva reflects the free or unbound plasma concentration. Thus, for phenytoin and other anticonvulsants — primidone, ethosuximide and carbamazepine, salivary concentration correlate well with drug efficacy and toxicity. The salivary concentration of procainamide correlates well with its cardiac effects. Although lithium is actively secreted into saliva, the saliva/plasma ratio is generally constant within an individual. Thus, after determination of the s/p ratio, saliva can be used to monitor therapy. Because salivary drug concentration may depend upon flow rate, pH and even by binding to parafilm which is sometimes chewed to induce saliva flow, further use of these noninvasive methods must await additional clinical studies.

The incidence of toxicity from digoxin has been reported to be as high as 20 percent.[6] The incidence of suboptimal therapy with quinindine may be as high as 70 percent.[7] The use of plasma concentration data has been shown to reduce digoxin toxicity from 12 to 6 percent,[8] and a similar reduction in the incidence of suboptimal therapy might be expected as well. Thus, the practitioner has at his disposal the means of achieving more frequently the desired therapeutic response of a number of commonly used drugs. The application of the principles described herein is generally uncomplicated and should enable the physician to make therapeutic decisions more easily.

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Joan M. Bruner

Laboratory Bills: Be Careful!

There is a statute in Arizona law (36-472) which all physicians should and must be aware. This statute states that studies which are performed in a laboratory outside of the physician's office must be so identified on any bills sent to the patient. The cost of such procedures, if being billed by the physician, must be the same as that charged to the doctor by the outside laboratory. A handling fee can be added to the doctor's customary professional fee for drawing the specimen which is being performed by the outside laboratory. Many physicians in the state of Arizona have still not complied with this state law. This editorial is being written to inform physicians again, that they can be held liable for violating the law. With the increasing costs for medical care, the Department of Health, Education and Welfare is making a determined effort to make certain that laws such as these are enforced. They will have access to records (via subpoena power) for patients covered by Medicare and/or Medicaid. It therefore is incumbent upon every physician in the state of Arizona to be aware of the law and to abide by it. Several methods are available to rearrange present bookkeeping procedures in order to incorporate the statutes into our daily practices. They should be done so immediately.

In summary, all physicians must be aware and must comply with Arizona state laws regarding full disclosure of laboratory costs to their patients. Enforcement of these laws up until this point has been neglected, but we have reason to believe that federal intervention in helping to see that the laws are complied with is presently being undertaken. Altering office procedures to incorporate these statutes into your practice is essential. The Maricopa County Medical Society has proposed to refer all violations to its Professional Committee. Flagrant violations are to be referred to BOMEX (State Board of Medical Examiners).

Marshall B. Block, Editor

An Update on the Breast Cancer Demonstration Program

It is timely to report on the findings in the Breast Cancer Detection Program and some of the projections for the future. The Breast Cancer Detection Program, at the College of Medicine, is funded in part by the National Cancer Institute (NCI) and some by the American Cancer Society. Tucson is one of 28 such programs in the United States. The program objectives are to determine whether careful screening by medical history, physical examination, thermographic study, and mammography can detect early cancers of the breast. The study design required enlistment of 10,000 asymptomatic women and evaluation of findings and determination of the worth of these techniques.

In the course of the first year, 10,000 women were surveyed. Very little publicity was needed to recruit patients for the project, but an effort was made to acquire a representative cross-community population so minority groups were specially contacted. The study has been successful, has achieved its design goals and does answer the posed questions. During the three years of study to date over 90 cancers have been treated in patients surveyed by the project. More than three-quarters of these were detected by mammography.

In the course of the three years there were reports which placed the program in some jeopardy. Considerable publicity was given to the possibility that radiation of the breast might induce cancers. Despite the fact that most physicists and radiologists disputed the arguments, it was necessary that NCI modify the guidelines so that mammography was not offered to owmen under 50 years of age unless there was a positive family history or a history of cancer in the opposite breast. In these instances, the individual patient is at greater risk. Fortunately, in Arizona the media kindly submitted the adverse publicity to the project personnel giving them an opportunity to refute or at least to soften the criticism. As a result, the loss of patients in the Arizona program amounted to less than 15%, rather than the higher figures encountered in other regions.

Based upon a preliminary report, a second adverse publicity campaign occurred. This report stated that about 60 women had breasts removed needlessly because of diagnoses made in Breast Cancer Detection Programs. A careful survey of the cases in question indicated that in all but two instances materials submitted for review by national pathology committees were incomplete. To illustrate from our program, a biopsy of the breast was made in a community hospital. The material was submitted to a Phoenix laboratory for analysis. The diagnosis of carcinoma was made quite correctly. The breast was resected at a Tucson hospital. In obtaining the material for review only the slides from the mastectomy were obtained. Since these contained no evidence of carcinoma and if no further information were provided, this could have been reported as a mistake in diagnosis. When the proper biopsy slides were obtained and reviewed, the case was included in the data properly. Comment should be made that the highly critical group has not rescinded their report publicly.

Thermography was evaluated in all institutions both as a separate and as a combined study. Its contribution was found insufficient to warrant continuing usage. The thermographic examination is now omitted from survey.

Patient responses are enthusiastic for the most part. The project continues. Much volunteer help and a highly responsive staff of technicians, nurses, and clerical workers assures continuance in a healthy manner.

It is a bit early to project the future since almost two full years of operation remain in the original five-year program. Each of the original enrolled women continuing with the project will be periodically rechecked and re-evaluated. Breast self-examination is stressed and instruction is renewed at each subsequent visit with quite satisfactory results. A continuation of the project, if only in this regard, would be most worthwhile. It is desirable, however, that this group of well-defined patients continue in future study to build on the data already collected. Several of the programs, including Arizona's, are contemplating follow-up of all patients to analyze the relationships between high risk factors and risk factors implied in a classification of the mammographic patterns, regardless of the exigencies of funding. All records of the patients will be maintained for a period of at least five years. Should comparative mammographic studies be obtained or should further information be needed from the records of these participants in the program, they will be available to the managing physician in the future.

Arthur Present, M.D.
Director, Breast Cancer
Detection Program
University of Arizona

Louis J. Kettel, M.D.
Dean, College of Medicine
University of Arizona

Auxiliary Highlights

In a word, *revitalization* would best overview the Auxiliary's Fall Conference held in combination with the regular state board meeting at the ArMA building in late September. At least this scribe noted the influence of new interpretations by new representation logically evolving from the current president's geographic locale. The merits reaped from the ever constant effort to seek leadership from throughout the state are perhaps more dramatically felt this year due to the Tucson residence of both the president and president-elect. Being members of long standing, they bring generous capacity for knowledgeable activity and reactivated enthusiasm through leadership status as well as the injection of new blood, long recognized as valuable to strong vital signs.

Existing priority programs continue, with the 100% immunization of state population being near first place. Personal immunization record charts and brochures are being distributed in cooperation with 27 participating agencies through a program approved by ArMA. Dollars will be needed for the next printing, legislation will be needed to change the law to require a state document verifying immunization records of each resident, and doctors' support of the concept through daily participation would provide instant success.

New interest was raised as Dr. Donald Langston spoke concerning ARMPAC. Another healthy sign appeared as additional voices asked about the workings of the political action committee, and the significance of membership was understood.

Reviewing the fall conference gives opportunity to express appreciation for the availability of the ArMA building. The facilities are not only attractively adequate for the Auxiliary's occasional use, the element of economy has made the difference between continuance of statewide leadership training effectiveness and a possible stagnation from lack of personal contact. Once again, it's ArMA aiding the Auxiliary aiding ArMA! Our thankfulness is not unsung.

Mrs. Melvin W. (Jean) Phillips
Auxiliary Editor

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ArMA Reports

THE MINUTES APPEARING IN THIS SECTION HAVE BEEN EDITED TO CONSERVE SPACE. A COMPLETE COPY OF THE MINUTES OF ANY MEETING WILL BE MAILED TO ANY MEMBER REQUESTING THEM.

EXECUTIVE COMMITTEE

The meeting of the Executive Committee of the Arizona Medical Association, Inc. held at 810 West Bethany Home Road, Phoenix, Arizona, on Friday, September 15, 1978, a quorum being present, convened at 6:46 p.m., Richard L. Dexter, M.D., President and Chairman, presiding.

DEPARTMENT OF HEALTH SERVICES

Due to Dr. Dandoy's absence, no activity report was received, however, Dr. Dandoy's memorandum regarding the Crippled Children's program dated September 11, 1978 was reviewed and discussed. It was the consensus of opinion that the Association should offer to Dr. Dandoy whatever support or assistance she might require at the time of or prior to requesting additional funds from the legislature in January.

AD HOC COMMITTEE ON AN ECONOMIC ORGANIZATION FOR ARIZONA PHYSICIANS

IT WAS MOVED AND CARRIED THAT THE APPOINTMENT OF ALFRED F. MILLER, M.D., BOYD R. BURKHARDT, M.D., RICHARD L. COLLINS, M.D., MURRAY S. FELDSTEIN, M.D., DANIEL S. NEEL, M.D., REX A. PETERSON, M.D., JAMES S. PUCELIK, M.D., ALBERT ROSENBLATT, M.D., RICHARD W. SWITZER, M.D., AND NEIL O. WARD, M.D., TO AN AD HOC COMMITTEE ON AN ECONOMIC ORGANIZATION FOR ARIZONA PHYSICIANS, BE CONFIRMED, WITH ALFRED F. MILLER, M.D., TO SERVE AS CHAIRMAN.

REVIEW AND COMMENT PROGRAM

Status of responses from county medical societies (Apache, Pima and Santa Cruz). RECEIVED.

AMA HEALTH INSURANCE CLAIM FORM

IT WAS MOVED AND CARRIED TO APPROVE THE FOLLOWING PARAGRAPHS PROPOSED FOR PRINTING ON THE REVERSE SIDE OF THE AMA HEALTH INSURANCE CLAIM FORM:

"I CERTIFY THAT THE SERVICES REPORTED ON THE REVERSE SIDE OF THIS FORM WERE NECESSARY TO THIS PATIENT AND WERE PERSONALLY RENDERED BY ME OR UNDER MY DIRECTION.

I FURTHER CERTIFY THAT THE CHARGES BILLED ARE IN ACCORDANCE WITH MY USUAL AND CUSTOMARY FEE CHARGED TO ALL PATIENTS.

I HEREBY AGREE TO KEEP SUCH RECORDS AS ARE NECESSARY TO DISCLOSE FULLY THE EXTENT OF SERVICES PERFORMED TO INDIVIDUALS ELIGIBLE TO PARTICIPATE IN THE INDOCHINA REFUGEE MEDICAL ASSISTANCE ACT ENACTED AS PUBLIC LAW 95-145 ON OCTOBER 28, 1977 AND TO FURNISH INFORMATION ON THE SERVICES AND CHARGES THEREFOR WHICH THE FEDERAL GOVERNMENT OR THE STATE OF ARIZONA MAY REQUEST.

IT IS FURTHER UNDERSTOOD THAT EACH PROVIDER OF COVERED SERVICES WILL PURSUE COLLECTION OF FEES FROM ANY PRIVATE INSURANCE WHICH THE PATIENT MAY HAVE PRIOR TO SUBMITTING BILLED CHARGES TO THE ARIZONA DEPARTMENT OF HEALTH SERVICES FOR PROCESSING AND PAYMENT PURSUANT TO THE INDOCHINA REFUGEE MEDICAL ASSISTANCE ACT."

AD HOC COMMITTEE REPORTS

Malpractice Insurance Crisis Committee

Dr. Dexter advised the committee that Dr. Vernor F. Lovett has recently resigned as chairman of MICC and that Edward Sattenspiel, M.D. had agreed to accept such chairmanship.

Dr. Sattenspiel then addressed the committee regarding his desire to obtain both perspective and retrospective approval from the Executive Committee and the Board of Directors relative to any actions which he might take in his capacity as chairman of MICC. Dr. Sattenspiel then discussed pending legislation and the Association's present position regarding the same, including a review of the recommendations of the Malpractice Insurance Crisis Committee to be presented to the Board of Directors for approval at its meeting on September 16, 1978.

IT WAS MOVED AND CARRIED TO RECOMMEND TO THE BOARD OF DIRECTORS THAT DR. SATTENSPIEL, AS CHAIRMAN OF THE MALPRACTICE INSURANCE CRISIS COMMITTEE, BE GIVEN PERSPECTIVE AND RETROSPECTIVE APPROVAL BY THE EXECUTIVE COMMITTEE AND THE BOARD OF DIRECTORS FOR ACTION TAKEN BY HIM ON BEHALF OF THAT COMMITTEE AND THE ASSOCIATION.

IT WAS MOVED AND CARRIED TO RECOMMEND TO THE BOARD OF DIRECTORS THAT THE FUNDS PRESENTLY AVAILABLE TO THE MALPRACTICE INSURANCE CRISIS COMMITTEE BE USED BY THE CHAIRMAN AS HE SHALL DETERMINE TO BE NECESSARY.

ALL AMERICAN MEDICAL HALL OF FAME

Following review of the August 31, 1978 letter from the St. Louis Medical Society, it was agreed that Mr. Robinson would contact John W. Kennedy, M. D. regarding selection of names for possible submission to the All American Medical Hall of Fame.

AMA INVITATION TO 12/2/78 MEETING

IT WAS MOVED AND CARRIED THAT ROBERT PRICE, M.D. BE INVITED TO ATTEND AND PARTICIPATE IN THE AMA STATE SPEAKERS CONFERENCE ON DECEMBER 2, 1978, ON BEHALF AND AT THE EXPENSE OF THE ASSOCIATION.

CANCELLATION OF KOOL-TV MEDICAL OPINION PROGRAM

Letter of Owens and Associates dated 8/25/78. RECEIVED.

NATIONAL HEALTH INSURANCE

Letter of Edward R. Curtis, M.D. dated 8/7/78. RECEIVED.

ARIZONA HEALTH SERVICE CORP.

Legal counsel's letter of 8/25/78 to Ward B. Studt, M.D. RECEIVED.

MARICOPA COUNTY MEDICAL SOCIETY BUDGET REVIEW COMMITTEE REPORT

Dr. Sattenspiel discussed with the committee the recommendations of the Maricopa County Medical Society Budget Review Committee.

REVIEW OF BOARD OF DIRECTORS' AGENDA FOR 9/16/78

The agenda was discussed, with several additions and changes being made.

OTHER BUSINESS

South Phoenix Area Health Education Center

Mr. Robinson presented a letter dated 9/13/78 from Anthony Vuturo, M.D., together with the project proposal regarding the South Phoenix Area Health Education Center. Following discussion, both documents were referred to the Governmental Services Committee for information and comment and then to the Medical Education Committee.

Board of Directors' Follow-Up Program

Mr. Robinson commented on a Board of Directors' Action Follow-Up Program which Dr. Chisholm has requested be instituted. Following discussion, it was determined to present the matter to the Board for its consideration.

National Medical Care Expenditure Survey Questionnaire

Dr. Dexter and Mr. Robinson reported that following a Yavapai County Medical Society meeting this month where there was discussion of certain questionnaires having been received by many of the doctors, it has been determined that the questionnaires related to a National Medical Care Expenditure Survey and an attempt would be made to secure a copy for review by the committee.

Western Physicians Purchasing Association

Dr. Kahle reported that Jim Allen has been hired as the Executive Director of the Western Physicians Purchasing Association and the negotiations with Schering Corporation were scheduled for September 27, 1978.

Also discussed was a similar program of the San Bernardino County Society.

BOARD OF DIRECTORS

The meeting of the Board of Directors of the Arizona Medical Association, Inc. held at 810 W. Bethany Home Road, Phoenix, Arizona on Saturday, September 16, 1978, a quorum being present, convened at 10:02 a.m., Richard L. Dexter, M.D., President and Chairman, presiding.

ArMPAC REPORT

Dr. Austin, Chairman of ArMPAC, reported that the ArMPAC Board of Directors was scheduled to meet on September 30, 1978; and that it appeared that they would be working with a budget of somewhere around $13 - $15,000 this year. Dr. Austin also advised that Burton Barr had expressed a desire to address the ArMPAC Board; and, further, that ArMPAC was hopeful of securing individual participation of the physicians in contacting and personally talking with candidates.

AUXILIARY REPORT

Immunization Program

Mrs. Carolyn Parsons reported further on the immunization program of the Pima County Council and distributed the brochure and immunization record book which were presently being prepared for statewide distribution. She also advised that the auxiliary members would be asked by newsletter to participate in a family immunization program and, additionally, that the Pima County Council has a committee working on updating legislation pertaining to immunization.

Conference and Meetings

Mrs. Parsons reported that their State Fall Conference would be held on September 27 and 28, 1978 and that plans for the auxiliary portion of the 1979 Annual Convention of the Association were in the finalization stages. Auxiliary members will be attending the fall conference in Chicago next month, which should prove to be very beneficial for the membership as a whole.

BOARD OF DIRECTORS

HEW's Second Opinion Program

AM News Review Article of 9/8/78. RECEIVED.

Response from societies to survey. RECEIVED.

HEW's letter of 8/8/78. RECEIVED.

AMA Mailgram

AMA Mailgram dated 8/15/78 indicating that one 1978 membership exceeded 1977 was received.

AMA Request for Nominations for Awards

Following discussion, Glenn M. Friedman, M.D. was nominated for the Benjamin Rush Award and Merv Willard, M.D. was nominated for the Goldberger Award.

Internal Revenue Service Audit

Mr. Robinson reported that the Internal Revenue Service had determined there was no participation by the Association in "grass roots lobbying" but, as yet, no determination had been received regarding the question of "unrelated business income."

Federal Election Commission Subpoenaes

Mr. Robinson reported that all information required under the subpoenaes issued by the FEC under the complaint filed by Common Cause had been assembled and would be delivered to the FEC by 9/20/78.

State Attorney General Demands

Mr. Robinson advised that, unofficially, the Association had been advised that the Attorney General was no longer interested in the Association, the 12 smaller counties or the specialty societies. The Attorney General was, however, still considering the possibility of suits against Maricopa and Pima County Medical Societies.

Board of Directors Action Follow-Up Program

Dr. Chisholm presented a possible follow-up program to be instituted regarding all Board of Directors' actions and, following discussion, it was determined to withdraw the proposal. The President indicated he would explore the development of a "fact-sheet" concept.

EXECUTIVE COMMITTEE

Membership Classification Changes Approved

Coconino County Medical Society:
  a. Marguerits S. Williams, M.D. - Active to Associate - Account Retirement - Effective 9/16/78 - Dues Exempt.
Maricopa County Medical Society:
  a. Pierre N. Levin, M.D. - Associate to Active Over 70 - Account Age and Working Part Time - Effective 9/16/78 - Dues Exempt.
  b. Benedict R. Walske, M.D. - Active to Associate - Account Retirement - Effective 1/1/78 - Dues Exempt.
Pima County Medical Society:
  a. Bernard Dickstein, M.D. - Active to Active Over 70 - Account Age - Effective 9/16/78 - Dues Exempt.
  b. Martha Goss, M.D. - Active to Active Over 70 - Account Age - Effective 9/16/78 - Dues Exempt.

Tenuate® ⓒⅣ
(diethylpropion hydrochloride NF)

Tenuate Dospan®
(diethylpropion hydrochloride NF) controlled-release

AVAILABLE ONLY ON PRESCRIPTION
Brief Summary

INDICATION: Tenuate and Tenuate Dospan are indicated in the management of exogenous obesity as a short-term adjunct (a few weeks) in a regimen of weight reduction based on caloric restriction. The limited usefulness of agents of this class should be measured against possible risk factors inherent in their use such as those described below.

CONTRAINDICATIONS: Advanced arteriosclerosis, hyperthyroidism, known hypersensitivity, or idiosyncrasy to the sympathomimetic amines, glaucoma. Agitated states. Patients with a history of drug abuse. During or within 14 days following the administration of monoamine oxidase inhibitors, (hypertensive crises may result).

WARNINGS: If tolerance develops, the recommended dose should not be exceeded in an attempt to increase the effect; rather, the drug should be discontinued. Tenuate may impair the ability of the patient to engage in potentially hazardous activities such as operating machinery or driving a motor vehicle; the patient should therefore be cautioned accordingly. *Drug Dependence* Tenuate has some chemical and pharmacologic similarities to the amphetamines and other related stimulant drugs that have been extensively abused There have been reports of subjects becoming psychologically dependent on diethylpropion. The possibility of abuse should be kept in mind when evaluating the desirability of including a drug as part of a weight reduction program. Abuse of amphetamines and related drugs may be associated with varying degrees of psychologic dependence and social dysfunction which, in the case of certain drugs, may be severe. There are reports of patients who have increased the dosage to many times that recommended. Abrupt cessation following prolonged high dosage administration results in extreme fatigue and mental depression; changes are also noted on the sleep EEG. Manifestations of chronic intoxication with anorectic drugs include severe dermatoses, marked insomnia, irritability, hyperactivity, and personality changes. The most severe manifestation of chronic intoxications is psychosis, often clinically indistinguishable from schizophrenia. *Use in Pregnancy*: Although rat and human reproductive studies have not indicated adverse effects, the use of Tenuate by women who are pregnant or may become pregnant requires that the potential benefits be weighed against the potential risks. *Use in Children*: Tenuate is not recommended for use in children under 12 years of age.

PRECAUTIONS: Caution is to be exercised in prescribing Tenuate for patients with hypertension or with symptomatic cardiovascular disease, including arrhythmias. Tenuate should not be administered to patients with severe hypertension. Insulin requirements in diabetes mellitus may be altered in association with the use of Tenuate and the concomitant dietary regimen. Tenuate may decrease the hypotensive effect of guanethidine. The least amount feasible should be prescribed or dispensed at one time in order to minimize the possibility of overdosage. Reports suggest that Tenuate may increase convulsions in some epileptics. Therefore, epileptics receiving Tenuate should be carefully monitored. Titration of dose or discontinuance of Tenuate may be necessary.

ADVERSE REACTIONS: *Cardiovascular*: Palpitation, tachycardia, elevation of blood pressure, precordial pain, arrhythmia. One published report described T-wave changes in the ECG of a healthy young male after ingestion of diethylpropion hydrochloride. *Central Nervous System*: Overstimulation, nervousness, restlessness, dizziness, jitteriness, insomnia, anxiety, euphoria, depression, dysphoria, tremor, dyskinesia, mydriasis, drowsiness, malaise, headache; rarely psychotic episodes at recommended doses. In a few epileptics an increase in convulsive episodes has been reported. *Gastrointestinal*: Dryness of the mouth, unpleasant taste, nausea, vomiting, abdominal discomfort, diarrhea, constipation, other gastrointestinal disturbances. *Allergic*: Urticaria, rash, ecchymosis, erythema. *Endocrine*. Impotence, changes in libido, gynecomastia, menstrual upset. *Hematopoietic System*: Bone marrow depression, agranulocytosis, leukopenia. *Miscellaneous*: A variety of miscellaneous adverse reactions has been reported by physicians. These include complaints such as dyspnea, hair loss, muscle pain, dysuria, increased sweating, and polyuria

DOSAGE AND ADMINISTRATION: Tenuate (diethylpropion hydrochloride): One 25 mg. tablet three times daily, one hour before meals, and in midevening if desired to overcome night hunger. Tenuate Dospan (diethylpropion hydrochloride) controlled-release: One 75 mg. tablet daily, swallowed whole, in midmorning. Tenuate is not recommended for use in children under 12 years of age.

OVERDOSAGE: Manifestations of acute overdosage include restlessness, tremor, hyperreflexia, rapid respiration, confusion, assaultiveness, hallucinations, panic states. Fatigue and depression usually follow the central stimulation. Cardiovascular effects include arrhythmias, hypertension or hypotension and circulatory collapse. Gastrointestinal symptoms include nausea, vomiting, diarrhea, and abdominal cramps. Overdose of pharmacologically similar compounds has resulted in fatal poisoning, usually terminating in convulsions and coma. Management of acute Tenuate intoxication is largely symptomatic and includes lavage and sedation with a barbiturate. Experience with hemodialysis or peritoneal dialysis is inadequate to permit recommendation in this regard. Intravenous phentolamine (Regitine®) has been suggested on pharmacologic grounds for possible acute, severe hypertension, if this complicates Tenuate overdosage.

Product Information as of April, 1976

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References: 1. Citations available on request — Medical Research Department, MERRELL RESEARCH CENTER, MERRELL-NATIONAL LABORATORIES, Cincinnati, Ohio 45215. 2. Hoekenga, M.T., O'Dillon, R.H., and Leyland, H.M. A Comprehensive Review of Diethylpropion Hydrochloride. International Symposium on Central Mechanisms of Anorectic Drugs, Florence, Italy, Jan. 20-21, 1977.

Merrell

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Whether overweight is a complicating factor... or just uncomplicated overweight.

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(diethylpropion hydrochloride NF)

75 mg. controlled-release tablets

A useful short-term adjunct in an indicated weight loss program.

Overweight patients in certain diagnostic categories often require strict obesity control. Diethylpropion hydrochloride has been reported useful in obese patients with hypertension, symptomatic cardiovascular disease, or diabetes. While it is not suggested that Tenuate in any way reduces these complications in the overweight, it may have a useful place as a short-term adjunct in a prescribed dietary regimen. (Tenuate should not be administered to patients with severe hypertension; see additional Warnings and Precautions on the opposite page.)

In uncomplicated obesity.

Many patients, on the other hand, present with excess fat but no disease. While this condition is often termed uncomplicated obesity, complications of both a social and a psychologic nature may be distressingly real for the patients. In these cases, a short-term regimen of Tenuate can help reinforce your dietary counsel during the important early weeks of an indicated weight loss program.

Clinical effectiveness.

The anorexic effectiveness of diethylpropion hydrochloride is well documented. No less than 16 separate double-blind, placebo-controlled studies attest to its usefulness in daily practice.[1] And the unique chemistry of Tenuate provides "...anorexic potency with minimal overt central nervous system or cardiovascular stimulation."[2] Compared with the amphetamines, diethylpropion has minimal potential for abuse.

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EMPIRIN® COMPOUND
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Wellcome
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Research Triangle Park
North Carolina 27709

Pinal County Medical Society:

a. Robert Z. Collings, Jr., M.D. - Active to Associate - Account Retirement - Effective 9/16/78 - Dues Exempt.
b. Robert S. Keller, M.D. - Active to Associate - Account Retirement - Effective 1/1/78 - Dues Exempt.

Yavapai County Medical Society:

a. Melvin W. Phillips, M.D. - Active to Associate - Account Retirement - Effective 9/16/78 - Dues Exempt.

BENEVOLENT AND LOAN COMMITTEE

Robert Carpenter Scholarship

Letter from Arizona Blue Cross/Blue Shield to Michael M. Christie dated 7/14/78. RECEIVED.

Mary B. Saufferer

Thank you letter from Mary B. Saufferer, scholarship award recipient. RECEIVED.

FINANCE COMMITTEE

Appointment of Earl J. Baker, M.D.

IT WAS MOVED AND CARRIED THAT THE APPOINTMENT OF EARL J. BAKER TO THE FINANCE COMMITTEE FOR THE TERM 1978-1981 BE CONFIRMED.

Financial Statement

Financial Statement for period ending 7/31/78. RECEIVED.

HEALTH CARE COST COMMITTEE

District Director Activities Report

Reports of all district directors on health care cost containment. RECEIVED.

Pima County Medical Society

Report of Dr. Hastings of meeting held 7/18/78. RECEIVED.

Valley View Community Hospital

Letter dated 8/17/78 from Valley View Community Hospital. RECEIVED. Following additional discussion by the Board,

IT WAS MOVED AND CARRIED THAT, IN THE FUTURE, ASSOCIATION MEMBERS WOULD, WHEN REFERRING TO HEALTH CARE COST, USE THE TERM "EFFECTIVENESS" RATHER THAN THE TERM "CONTAINMENT."

HEALTH MANPOWER COMMITTEE

Arizona Health Service Corps

Counsel's letter of 8/25/78 to Ward B. Studt, M.D. RECEIVED.

LEGISLATIVE COMMITTEE

Appointment of Thomas F. Moore, M.D.

IT WAS MOVED AND CARRIED THAT THE APPOINTMENT OF THOMAS F. MOORE, M.D. FOR THE TERM 1978-1981 BE CONFIRMED.

MALPRACTICE INSURANCE CRISIS COMMITTEE, AD HOC

Resignation of Vernor F. Lovett, M.D.

IT WAS MOVED AND CARRIED THAT THE RESIGNATION OF VERNOR F. LOVETT, M.D. AS CHAIRMAN AND MEMBER OF THE AD HOC MALPRACTICE INSURANCE CRISIS COMMITTEE BE ACCEPTED.

Appointment of Edward Sattenspiel, M.D.

IT WAS MOVED AND CARRIED THAT THE APPOINTMENT OF EDWARD SATTENSPIEL, M.D. AS CHAIRMAN OF THE AD HOC MALPRACTICE INSURANCE CRISIS COMMITTEE BE CONFIRMED.

IT WAS MOVED AND CARRIED THAT EDWARD SATTENSPIEL, M.D. BE GRANTED THE RIGHT TO ACT FOR AN ON BEHALF OF THE ASSOCIATION, WITH FULL CONCURRENCE BY THE BOARD OF DIRECTORS; THAT ALL ArMA POLICY DECISIONS WILL BE PERSPECTIVELY, WHEN FEASIBLE, AND RETROSPECTIVELY, WHEN NECESSARY, SANCTIONED BY THE EXECUTIVE COMMITTEE AND THE BOARD OF DIRECTORS; AND THAT, SUBJECT TO THE USUAL PROCEDURES, DR. SATTENSPIEL BE GIVEN THE UTILIZATION OF THE FUNDS AVAILABLE TO THE MALPRACTICE INSURANCE CRISIS COMMITTEE.

MICC Recommendations

IT WAS MOVED AND CARRIED TO ADOPT, ENDORSE AND APPROVE THE FOLLOWING FIVE RECOMMENDATIONS OF MICC:

1. THAT THE ARIZONA MEDICAL ASSOCIATION ACTIVELY SUPPORT THE CONTINUATION OF THE JUP IN ITS *PRESENT FORM.* IF IT PROVES POLITICALLY NECESSARY, THE ARIZONA MEDICAL ASSOCIATION WOULD CONSIDER A MAXIMUM INCREASE IN THE PROVIDER PARTICIPATION IN THE JUP FROM 11%, 13% AND 15% TO 15%, 17% AND 19%.
2. THAT THE ARIZONA MEDICAL ASSOCIATION ACTIVELY SUPPORT A REFERENDUM THROUGH THE LEGISLATURE THAT THE 1980 GENERAL ELECTION BALLOT WOULD CARRY THE QUESTION OF AMENDING THE STATE CONSTITUTION TO LIMIT PAIN AND SUFFERING AWARDS TO $25,000 IN ALL LIABILITY AREAS (i.e. PRODUCT, ALL PROFESSIONAL, MUNICIPAL, ETC.). BUT NOT TO LIMIT MAXIMUM AWARDS IN ANY OTHER WAY.
3. THAT THE ARIZONA MEDICAL ASSOCIATION SUPPORT THE CONCEPT OF ITEMIZED VERDICTS AND PERIODIC PAYMENTS, AND TO SEEK REFERENDUM THROUGH THE ARIZONA LEGISLATURE TO PLACE THIS ON THE 1980 GENERAL ELECTION BALLOT SHOULD IT BE NECESSARY TO AMEND THE ARIZONA CONSTITUTION TO ACCOMPLISH THIS.
4. THAT THE ARIZONA MEDICAL ASSOCIATION ACTIVELY SUPPORT THE INTRODUCTION AND PASSAGE OF A REFERENDUM THROUGH THE ARIZONA LEGISLATURE TO AMEND THE STATE CONSTITUTION ALLOWING FOR A MANDATORY OFFSET FOR ALL COLLATERAL SOURCES OF REIMBURSEMENT IN ALL LIABILITY AREAS (i.e. PRODUCT, ALL PROFESSIONAL, MUNICIPAL, ETC.).
5. THAT THE ARIZONA MEDICAL ASSOCIATION SUPPORT THE CONCEPT THAT PUNITIVE DAMAGES, WHEN AWARDED, SHOULD NOT PROVE TO BE A WINDFALL GAIN FOR THE PLAINTIFF AND WE WOULD RECOMMEND THAT ALL PUNITIVE DAMAGE AWARDS GO TO A SPECIAL FUND SUCH AS THE JUP, MEDICAL RESEARCH, REHABILITATION PROGRAMS, OR OTHER SIMILAR ITEMS.

MATERNAL AND CHILD HEALTH CARE COMMITTEE

Introduction of Harold D. Gabel, M.D.

Dr. Scott, Chairman of the Maternal and Child Health Care Committee, introduced Harold D. Gabel, M.D., the newly appointed Executive Director of the Arizona Perinatal Program, giving a brief resume of Dr. Gabel's background, after which Dr. Gabel addressed the Board.

PUBLIC RELATIONS COMMITTEE

Discontinuance of KOOL-TV Medical Opinion Program

Letter of Owens & Associates dated 8/25/78. RECEIVED.

Sandy Petersen, Public Relations Director, for Owens & Associates, addressed the Board regarding the discontinuance of the program and some of the reasons for same. Mr. Petersen also indicated there was a possibility of the program being repackaged for submission to Phoenix and Tucson stations.

IT WAS MOVED AND CARRIED THAT THE BOARD GIVE DR. MERLIN DuVAL RECOGNITION FOR THE TIME AND EFFORT HE HAD DEVOTED TO THE MEDICAL OPINION PROGRAM FOR THE YEARS IT HAD BEEN SO WELL PRESENTED AND SO WELL RECEIVED.

It was the consensus of the membership that a letter be sent to KOOL-TV expressing the Association's gratitude for the long and beneficial relationship enjoyed during the run of the Medical Opinion program.

SCIENTIFIC ASSEMBLY COMMITTEE

Appointment of James M. Hurley, M.D.

IT WAS MOVED AND CARRIED THAT THE APPOINTMENT OF JAMES M. HURLEY, M.D. AS VICE-CHAIRMAN OF THE SCIENTIFIC ASSEMBLY COMMITTEE FOR 1978-79 AND AS CHAIRMAN FOR 1979-1980 BE CONFIRMED.

1981 Annual Meeting Location

IT WAS MOVED AND CARRIED TO ADOPT THE MOTION OF THE SCIENTIFIC ASSEMBLY COMMITTEE THAT THE 1981 ANNUAL MEETING OF THE ASSOCIATION BE HELD IN THE PHOENIX - SCOTTSDALE AREA.

OTHER BUSINESS

Special Meeting of House of Delegates

Attendance Report for 10/7/78 Special Meeting of House of Delegates. RECEIVED.

Medical Practice Act

Paul Boykin, Executive Director of the Board of Medical Examiners, presented to the Board for its review and approval certain amendments to the Medical Practice Act relating to licenses and CME requirements to be taken to the legislature in January.

IT WAS MOVED AND CARRIED THAT THE AMENDMENTS TO THE MEDICAL PRACTICE ACT RELATING TO LICENSES AND CME REQUIREMENTS AS PRESENTED BY BOMEX BE REFERRED TO THE LEGISLATIVE COMMITTEE FOR RETURN OR ACTION, AS IT DETERMINES.

BOMEX Status

Paul Boykin advised the Board that, pursuant to the "Sunset Law," BOMEX is scheduled to go out of business in 1981, unless it provided the 1980 legislature with sound reasoning for its continuance and that BOMEX was seeking an expression of interest from the Association.

IT WAS MOVED AND CARRIED THAT THE MATTER OF BOMEX STATUS AND THE EXTENT OF THE ASSOCIATION'S HELP AND PARTICIPATION IN OBTAINING A RENEWAL OF THE RIGHT OF BOMEX TO CONTINUE BE REFERRED TO THE EXECUTIVE COMMITTEE FOR CONSIDERATION AND ACTION.

Western Physicians Purchasing Association

Dr. Kahle, as President of the Western Physicians Purchasing Association, reported to the Board that Jim Allen has been hired as the Executive Director and that negotiations were scheduled for September 25, 1978 with Schering Corporation.

PUBLIC RELATIONS COMMITTEE

The meeting of the Public Relations Committee of the Arizona Medical Association, Inc. held at 810 West Bethany Home Road, Phoenix, Arizona, on Thursday, September 21, 1978, convened at 7:26 p.m., Ira B. Ehrlich, M.D., Chairman, presiding.

KOOL-TV MEDICAL OPINION PROGRAM

Discontinuance

Letter of Owens & Associates dated 8/25/78 regarding KOOL-TV's determination to discontinue Medical Opinion subsequent to the final broadcast scheduled for 9/30/78. RECEIVED.

News Format

Letter of KOOL Radio Television, Inc. dated 9/7/78 regarding possible consideration of inclusion of a medical segment in their newly instituted hour-long news program. RECEIVED.

Sandy Petersen presented to the committee his thoughts regarding the reasoning behind the discontinuance and, following a lengthy discussion of the matter, it was the consensus of the membership that Mr. Petersen, on behalf of the committee and the Association pursue with all available stations in Phoenix and Tucson 1) the repackaging of the Medical Opinion program for showing in a similar manner to that presented in the past and 2) a one-man presentation to be included as a portion of the local news broadcast.

Mr. Petersen also requested assistance from the committee concerning panelists for the "open line" taping for the final Medical Opinion broadcast. Following discussion, it was agreed that, schedules permitting, George F. Brown, M.D. and James R. Callison, M.D. would be the panelists for such program.

"HEALTH DOLLARS AND SENSE" BROCHURE

Distribution

Bruce Robinson reported briefly on the volume of copies of the "Health Dollars and Sense" brochure thus far distributed and the tremendous response that had been received. Following a discussion, it was determined by the committee that a reminder mailing be made which would include a re-order postcard in an effort to make further distribution of this brochure prior to preparation of a like volume two.

AD HOC COMMITTEE ON HEALTH CARE COST CONTAINMENT REPORT

Dr. Christ briefly discussed the format of the recently printed "Report on Health Care Cost Containment," which Mr. Robinson advised was ready for distribution within the next week or two of the following: All Arizona Physicians, All State Legislators, Arizona Congressional Delegation, Arizona Hospital Administrators and the News Media.

The Press Release prepared for September 25, 1978, regarding "cost effectiveness" and the Association's "Report on Health Care Cost Containment" was briefly discussed and received for information.

PRESS RELATIONS

The negative press coverage of recent weeks was discussed at length by the committee; however, any action on the part of the Association was tabled for the present.

Future Medical Meetings

CONTINUING MEDICAL EDUCATION

The following institutions and organizations have been accredited for their continuing medical education programs by the Liaison Committee on Continuing Medical Education.

Arizona Heart Institute
Arizona Medical Association, Inc.
Arizona State Hospital, Phoenix
Desert Samaritan Hospital, Mesa
Good Samaritan Hospital, Phoenix
Health Maintenance Associates
Phoenix Indian Medical Center
Phoenix Psychiatric Council
Maricopa County General Hospital, Phoenix
Memorial Hospital, Phoenix
St. Luke's Hospital & Medical Center, Phoenix
St. Joseph's Hospital & Medical Center, Phoenix
Tucson Hospitals Medical Education Program, Tucson
U of A College of Medicine
Veterans Administration Center, Prescott
Veterans Administration Hospital, Phoenix

The accredited institutions and organizations above produce a variety of continuing medical education programs. Each accredited institution and organization is responsible for designating which of these programs meet ArMA's requirements for Category 1 credit. Physicians who participate in programs which are designated Category 1 by accredited institutions will receive Category 1 credit toward the ArMA Certificate in CME and the AMA's Physician's Recognition Award.

Individual program listings below indicate Category of CME. Where not indicated, no credit has been approved. For further information on any programs, contact person named.

NOVEMBER

26th Annual Meeting of the Medical Society of the United States and Mexico

November 15-18, 1978. Guadalajara, Jalisco, Mexico. Contact: Mrs. Carolyn Parsons, Exec. Secy., 3161 N. Pantano Rd., Tucson, AZ 85715.

The Executive Physician Development Conference: Management in the Framework of Accounting & Finance

November 13-17, 1978. Arizona Inn, Tucson, AZ. Sponsor: U of A College of Medicine. Office of Continuing Medical Education and Outreach. Contact: Anthony F. Vuturo, M.D. Approved for 50 hours of category 1 credit.

DECEMBER

New Trends in Surgery: Arizona Chapter American College of Surgeons Annual Conference

December 1 & 2, 1978. Doubletree Inn, Scottsdale, AZ. Sponsor: Arizona Chapter of Surgeons. Contact: James J. Berens, M.D., 550 W. Thomas Rd., Phoenix, AZ 85013. Approved for 12 hours of category 1 credit.

7th Annual Seminar "Pulmonary Diseases - Part II"
December 9 & 10, 1978. Camelback Inn, Scottsdale, AZ. Sponsor: Maricopa County General Hospital. Contact: Alex Newman, M.D., Program Chairman, Dept. of Radiology, Maricopa County General Hospital, 2601 E. Roosevelt St., Phoenix, AZ 85008. Approved for 14 hours of category 1 credit.

Emergency Care Update
December 14, 15 & 16, 1978. Arizona Health Sciences Center, U of A, Tucson, AZ. Sponsor: U of A College of Medicine. Contact: Office of Continuing Medical Education, Attn.: Katharine C. Blosch, University of Arizona College of Medicine, Arizona Health Sciences Center, Tucson, AZ 85724. (602) 626-6173. Approved for 16.5 hours of category 1 credit.

1979
JANUARY

Lifestyles and Health
January 13 & 14, 1979. Sherton-Palace Hotel, San Francisco, CA. Sponsor: University of California, San Francisco. Contact: Ms. Bruce, University of California, San Francisco, Continuing Education In Health Sciences, 1343 3rd Ave., San Francisco, CA 94143.

Critical Care of Neurological and Neurosurgical Emergencies
January 25-27, 1979. Camelback Inn, Phoenix, AZ. Sponsor: St. Joseph's Hospital and Medical Center, Barrow Neurological Institute. Contact: Richard A. Thompson, M.D., Chairman, 350 W. Thomas Rd., Phoenix, AZ 85013. Approved for category 1 credit.

Selected Horizons in Infection Diagnosis and Laboratory Management
January 27-28, 1979, Tucson Marriott Hotel, Tucson, AZ. Sponsors: Arizona Society of Pathologists and the American Society of Clinical Pathologists. Contact: Carol Turner, 810 W. Bethany Home Rd., Phoenix, AZ 85013. (602) 246-8901. Approved for 7 hours category 1 credit.

FEBRUARY

Southwest Desert Symposium In Anesthesiology
February 2-4, 1979. Doubletree Inn, Tucson, AZ. Sponsor: U of A College of Medicine, Dept. of Anesthesiology, and Office of Continuing Medical Education. Contact: Office of Continuing Medical Education, U of A College of Medicine, Health Sciences Center, Tucson, AZ 85724. Approved for 17 hours of category 1 credit.

Selected Topics in Neuroradiology
February 7-9, 1979. San Diego, CA. Sponsor: San Diego Radiology Research & Education Foundation and the American College of Radiology. Contact: Mary J. Ryals, Radiology, P.O. Box 2305, La Jolla, CA 92038. (714) 453-7500, Ex. 3711. Approved for 22½ hours of category 1 credit.

Second Annual Postgraduate Course in OB/GYN
February 14-16, 1979, Scottsdale Hilton Hotel, Scottsdale, AZ. Sponsors: Phoenix OB/GYN Society and Dept. of OB/GYN Maricopa County General Hospital. Contact: Secretary, Phoenix OB/GYN Society, 333 E. Virginia, Ste. 222, Phoenix, AZ 85004, (602) 257-9218. Approved for category 1 credit.

Health Policy and Chronic Illness: The National Debate
February 17 and 18, 1979. Sheraton-Place Hotel, San Francisco, CA. Sponsor: University of California, San Francisco Schools of Medicine. Contact: Ms. Bruce, University of California, San Francisco Continuing Education in Health Sciences, 1343 3rd Ave., San Francisco, CA 94143.

16th Annual Meeting of the Federation of Western Societies of Neurological Science, Inc.
February 22-25, 1979. Mountain Shadows, Scottsdale, AZ. Contact: Larry Stern, M.D., Program Chairperson, U of A Dept. of Neurology, Tucson, AZ 85721. Approved for 17 hours of category 1 credit.

Pediatric Update 1979
February 26 - March 1, 1979. Scottsdale Sheraton Inn, Scottsdale, AZ. Sponsor: St. Joseph's Hospital & Medical Center, Phoenix, AZ. Contact: Tracy L. Trotter, M.D., Dept. of Pediatric Education, St. Joseph's Hospital & Medical Center, 350 West Thomas Rd., Phoenix, AZ 85013. Approved for 16 hours of category 1 credit.

MARCH

Day of G.I. & Liver Disease
March 2, 1979. Camelback Inn, Scottsdale, AZ. Sponsor: St. Joseph's Hospital and Medical Center. Contact: Ethelann Murray, M.D., St. Joseph's Hospital and Medical Center, 350 W. Thomas Rd., Phoenix, AZ 85013. Approved for 6 hours of category 1 credit.

New Mexico Metabolism Symposium
March 8, 9, & 10, 1979, Taos, New Mexico. Contact: Office of Education, Lovelace Medical Center, Albuquerque, New Mexico. (505) 842-7353.

Clinical Recognition and Management Of Heart Disease — 1979
March 22, 23 & 24, 1979. U of A, Health Sciences Center, Main Auditorium. Sponsor: U of A College of Medicine. Contact: Registrar, American College of Physicians, 420 Pine St., Philadelphia, PA 19104.

Second International Conference on the Adjuvant Therapy of Cancer
March 28-31, 1979. Tucson Convention Center, Tucson, AZ. Sponsor: U of A College of Medicine, Cancer Center Division. Contact: Cancer Center Division, U of A College of Medicine, Tucson, AZ 85724. Approved for 23 hours of category 1 credit.

MONTHLY OR WEEKLY

Headache Rounds
Tuesday afternoons or Thursday mornings weekly. Sponsor: Headache Group of the Southwest. Contact: Peggy Voigt, 2610 W. Bethany Home Rd., Phoenix, AZ 85017, or phone 242-6646.

Shrine Medics Meeting
Second Tuesday of each month, Doctors Hospital, 5:45 p.m., J. South Classroom. Sponsor: Shrine Medics. Contact: Robert C. Briggs, M.D., 5121 N. Central Ave., Phoenix, AZ 85012.

Office Psychiatry for the Primary Provider
2nd Monday of month, 4811 N. 7th Street, Phoenix, AZ. Sponsor: Arizona Health Plan. Contact: T.R. Bittker, M.D., Box 5000, Phoenix, AZ 85010. Approved for category 1 credit.

Counter Transference Group
Weekly, Thurs. 8-10 p.m. Sponsor: Phoenix Psychiatric Council. Contact: James E. Campbell, M.D., 5051 N. 34th St., Phoenix, AZ 85018. Approved for 2 hours category 1 credit.

Monthly Meeting of Tucson Radiologists
Last Tues. of month. Plaza International, Tucson, AZ. Sponsor: U of A Medical Center, Dept. of Radiology. Contact: Irwin M. Freundlich, M.D., Arizona Medical Center, Dept. of Radiology, Tucson AZ 85724. Approved for 2 hours category 1 credit.

Pediatric Grand Rounds
Tuesday 7:30-8:30 a.m. in Phoenix: 1st Tues.—Phoenix Indian Hospital, 2nd Tues.—Maricopa County Hospital, 3rd Tues.—Good Samaritan Hospital, 4th Tues.—St. Joseph's Hospital. Sponsor: Maricopa County Hospital (Phoenix Hospital's Affiliated Pediatric Program). Contact: J. Kipp Charlton, M.D., 2601 E. Roosevelt, Phoenix, AZ 85008. Approved for 1 hour per session category 1 credit.

Review of Forensic Pathology, Current Case, Special Topics
Thursday, weekly, 11 a.m., 120 S. 6th Ave., Phoenix, AZ. Sponsor: Arizona Society of Pathologists. Contact: H.H. Karnitschnig, M.D., 120 S. 6th Ave., Phoenix, AZ. Approved for 1 hour per session category 1 credit.

Staff Education Conference
Wednesdays, weekly, 1 p.m., Arizona State Hospital, Phoenix, AZ. Sponsor: Arizona State Hospital. Contact: Howard E. Wulsin, M.D., Arizona State Hospital, 2500 E. Van Buren, Phoenix, AZ 85008. Approved for 1 hour per session category 1 credit.

BARROW NEUROLOGICAL INSTITUTE

Medical Education
Barrow Neurological Institute of St. Joseph's Hospital and Medical Center, 350 W. Thomas Road, Phoenix, AZ 85013. Sponsor: St. Joseph's Hospital & Medical Center. Contact: John R. Green, M.D. Approved for 1 hour category 1 credit.

Neurology Teaching Conference
Tuesdays, 8:30-9:30 a.m., Eighth Floor Conf. Room.

Neurosurgery Morbidity Conference
Wednesdays, 8:15-9:15 a.m., on first and third weeks, Eighth Floor Conference Room.

Neuro-ophthalmology Conference
Tuesdays, 7:30 a.m. in 8th floor neurology conference room.

Spinal Injury Conference
Wednesdays, 8:15-9:15 a.m., on ~~second~~ and fourth weeks, in Neuropathology Conf. Room—a multidisciplinary review of admission by neurosurgeons, orthopedists, and rehabilitation specialists.

Neuropathology of Gross Specimens Conference
Thursdays, 7:30-8:30 a.m. in the Morgue.

Neurology-Neurosurgical Clinical-Neuroradiological and Neuropathological Conference
Fridays, 8-9 a.m., First Floor Conference Room.

Neuropathology or Neuroradiology Conferences
Fridays, 9 a.m., Neuropathology in Neuropathology Conference Room, Neuroradiology in First Floor Conference Room.

Neurorehabilitation Conference
Tuesdays, noon, 8th Floor Conference Room.

Neurosurgical Journal Club
Saturdays, 9-11 a.m., in Eighth Floor Conference Room.

CAMELBACK HOSPITAL

5055 N. 34th St., Phoenix, AZ 85018. Sponsor: Camelback Hospital. Contact: Medical Director.

Patient Staffing Conference
Three times weekly.

DESERT SAMARITAN HOSPITAL

Wednesday evenings, 7 p.m. Sponsor: Desert Samaritan Hospital. Contact: L.A. Rosati, M.D., Laboratory, Desert Samaritan Hospital, Mesa, AZ 85202. Approved for category 1 credit.

GOOD SAMARITAN HOSPITAL

Clinical Cancer Conference
3rd Wednesday, every month, Butler Bldg. Conference Room, Good Samaritan Hospital. Contact: John A. Bruner, M.D., 926 E. McDowell Road, Phoenix, AZ 85006. Approved for 1 hour per session category 1 credit.

Pulmonary Disease Grand Rounds
Mondays, 12 Noon, D-5 North Conference Room, Good Samaritan Hospital, Phoenix, AZ. Sponsor: Pulmonary Disease Teaching Service, Good Samaritan Hospital. Contact: Bernard E. Levine, M.D., Pulmonary Function Laboratory, Good Samaritan Hospital, 1033 E. McDowell Road, Phoenix, AZ 85006. Approved for 1 hour category 1 credit.

MARYVALE SAMARITAN HOSPITAL

Continuing Medical Education Program
Maryvale Samaritan Hospital, every other Wednesday, 7-8 a.m., January 25, 1978 through December 27, 1978. Sponsor: Medical Staff of Maryvale Hospital. Contact: Richard C. Christensen, M.D. Approved for 1 hour per session category 1 credit.

MARICOPA COUNTY GENERAL HOSPITAL

2601 E. Roosevelt, Phoenix, AZ 85008. Sponsor: Maricopa County General Hospital. Contact: H.F. Lenhardt, M.D., Dir. of Medical Education. Approved for category 1 credit.

Total Joint Replacement
Oct. 27 & 28, 1978. Maricopa County General Hospital.

7th Annual Radiology Seminar "Pulmonary Diseases Part II"
Dec. 9 & 10, 1978, Camelback Inn, Scottsdale, AZ 85253.

Recent Advances in Geriatric Psychiatry
January 20, 1979. Maricopa County General Hospital.

5th Annual MCGH Urological Seminar
January 27 & 28, 1979. Doubletree Inn, Scottsdale, AZ 85251.

Current Advances in Obstetrics and Gynecology
Feb. 14, 15 & 16, 1979, Scottsdale Hilton Hotel, Scottsdale, AZ.

Medical Progress: A Review of Advances in Medicine in the Past 5 Years
Feb. 22, 23 & 24, 1979. Carefree Inn, Carefree, AZ 85331.

The Head presented by Department of Radiology, Feb. 9, 10 & 11, 1979. Doubletree Inn, Scottsdale, AZ 85251.

MEMORIAL HOSPITAL

1201 S. 7th Ave., Phoenix, AZ 85036. Sponsor: Memorial Hospital. Approved for category 1 credit.

Monthly Medical Education Seminar
Third Monday, 6:30 p.m., Kiva Conference Room. Contact: George Scharf, M.D.

Tumor Board Conference
Every Friday at Noon, Kiva Conference Room. Contact: Howard Kimball, M.D.

SCOTTSDALE MEMORIAL HOSPITAL

7300 E. 4th St., Scottsdale, AZ 85251. Sponsor: Scottsdale Memorial Hospital. Contact: W.S. Williams, M.D., Director of Medical Education.

Clinical Pathological Conference
4th Monday, monthly, 12:45 p.m.

Family Practice Conference
1st Monday, monthly, 12:45 p.m.

Medical Grand Rounds
3rd Monday, monthly, 12:45 p.m.

Morbidity & Mortality Conference
2nd Monday, monthly, 12:45 p.m.

ST. MARY'S HOSPITAL & HEALTH CENTER

1601 West St. Mary's Rd., Tucson, AZ 85703. Sponsor: St. Mary's Hospital & Health Center. Contact: see below.

Cardiology Conference
Every Friday 8-9 a.m., Century Room A. Contact: Anthony L. Forte, M.D.

Monthly Specialty Conference of the Department of Surgery
First Monday, monthly, 7:30 a.m., Century Room A. Contact: Medical Staff Office. Approved for 1 hour of category 1 credit.

Grand Rounds: Medical, Surgical, Family Practice, Pathology, Radiology
Weekly, Thursday, 7-8:30 a.m. Contact: Richard A. Silver, M.D. Approved for 1 hour category 1 credit.

U OF A HEALTH SCIENCES CENTER

Tucson, AZ 85724. Sponsor: U of A College of Medicine. Contact: See below. Approved for category 1 credit.

Clinical Immunology, Allergy & Rheumatology Rounds
Every Friday, Noon-1 p.m. Contact: John Boyer, M.D., Dept. of Internal Medicine.

Cerebrovascular Disease Conference
Mondays, 5-6 p.m., weekly, Room 5505. Contact: Wesley Moore, M.D., Depts. of Surgery, Neurology & Radiology.

Dean's Clinical Rounds
October 18, 1978, Main Auditorium, UAHSC. Contact: Louis J. Kettel, M.D.

Endocrinology Seminar
Every Thursday, Noon-1 p.m., 1st, 3rd & 5th Thursday, Room N318, VA Hospital. 2nd & 4th Thursday, Room 6505, Tucson Medical Center. Contact: Dept. of Internal Medicine.

Hematology-Oncology Clinical Conference
Every Tuesday, Noon-1 p.m., 1st, 3rd & 5th Tuesdays, Room 6505, Tucson Medical Center. 2nd & 4th Tuesdays, Room N318, VA Hospital. Contact: Sidney Salmon, M.D., Dept. of Internal Medicine.

Joint Thyroid Clinic Conference
1st & 3rd Wednesdays of every month. AHSC, Rm. 6505. Contact: Sidney Werner, M.D., Dept. of Internal Medicine/Endocrinology Section.

Medical Grand Rounds
Every Wed., Noon-1 p.m., 1st, 3rd & 5th Wed., Staff Conf. Room, VA Hospital. 2nd & 4th Wed., Room 5403, UAHSC. Contact: Jay Smith, M.D., Dept of Internal Medicine.

Nuclear Medicine
Thursday, 7:30 a.m., Radiology Conf. Room, UAHSC. Contact: Irwin M. Freundlich, M.D., Dept of Diagnostic Radiology.

Neurology Grand Rounds
Every Friday, Noon, 1st, 3rd & 5th Fridays, UAHSC, Room 7505. 2nd & 4th Fridays, VA Hospital. Contact: William A. Sibley, M.D., Dept. of Neurology.

Neuropathology Review Conference
Thursdays, 8:30 a.m., Room 5120, UAHSC. Contact: Peter C. Johnson, M.D.

Neurosciences Seminar
Every Friday, 7:30 a.m., UAHSC, Room 7505. Contact: Colin R. Bamford, M.D., or Jose F. Laguna, M.D., Dept. of Neurology.

Pathology Seminar
Friday, 4:30-5:30 p.m., Room 5120, UAHSC. Contact: Kenneth Ryan, M.D., Dept. of Pathology.

Tucson Pathologist Conference
First Monday of the month, 7:30-9 p.m. Rotation between Tucson Pathology Conf Rooms. Contact: Merel Clard, M.D., Tucson Pathologists.

Pediatric Grand Rounds
Every Tuesday, 12:30-1:30 p.m. Alternates between Tucson Medical Center & UAHSC. Contact: Hugh Thompson, M.D., Dept. of Pediatrics.

Problem Case Workshop
3rd Monday of each month, 7:30 a.m., Room 4410, UAHSC. Contact: H.E. Cross, M.D., Ph.D., Div. of Ophthalmology.

Psychiatric Grand Rounds
Every Wednesday, Sept. to May 4, 5:30 p.m., Room 8403 UAHSC. Contact: Alan Levenson, M.D., Dept. of Psychiatry.

Chest Radiology
Monday, 5-6 p.m., weekly, Room 1535F, UAHSC. Contact: Irwin M. Freundlich, M.D., Dept. of Radiology.

Gastrointestinal Radiology
Mondays, 7:30 a.m., weekly except for summer months. Contact: Irwin M. Freundlich, M.D., Dept. of Radiology.

Radiation Oncology Planning Conference
Friday, weekly, 8:30-10 a.m., UAHSC, Room 0655. Contact: Robert S. Heusinkveld, M.D., Radiation Oncology Section.

Radiology-Rheumatology Conference
Thursday, 8 a.m., UAHSC, Library Room 1535C. Contact: Irwin M. Freundlich, M.D., Dept. of Radiology.

Vascular Radiology
January-June 1978, 7:30 -8:30 a.m., every Friday. Contact: Irwin M. Freundlich, M.D., Dept. of Radiology.

Radiology Interesting Case Conference
Thursday, Noon, VA Hospital. Contact: Irwin M. Freundlich, M.D., Dept. of Radiology.

Resident's Conference
Wednesday, weekly 5-6 p.m., Diag. Radiology Conf. Room. Contact: Irwin M. Freundlich, M.D., Dept of Radiology.

Trauma Conference
Every Thursday, 4-5 p.m. UAHSC, Room 5505. Contact: Martin Silverstein, M.D., Dept. of Surgery.

Grand Ward Rounds—Trauma
Every Tuesday, 8 a.m., UAHSC. Contact: Martin Silverstein, Surgery Dept., Trauma Section.

Monthly Meeting Tucson Ultrasonography Group
First Wednesday of month, 4:30-5:30 p.m., UAHSC. Contact: Irwin M. Freundlich, M.D.

Tucson Urological Society Scientific Meeting
Monthly. Contact: George W. Drach, M.D., Depts of Surgery & Urology.

General Urology Conference
Tuesday, 5-6 p.m. Thursday, Noon-1:30 p.m., UAHSC Meeting Rooms & VA Hospital. Contact: George W. Drach, M.D., Dept. of Surgery/Urology Section.

AMERICAN HOLISTIC MEDICAL ASSOCIATION
presents
PRACTICAL MANAGEMENT OF STRESS RELATED PROBLEMS — II
at
UNIVERSITY OF SAN FRANCISCO
January 10-14, 1979

An exciting, Holistic, multidisciplinary experience including top experts in biofeedback manipulation, nutrition, physical exercise, acupuncture *and much more* at the University of San Francisco.

Co-sponsored by The American Society of Contemporary Medicine and Surgery; 40 hours of Category I CME.

CONTACT FOR BROCHURE
AHMA
Rt. 2. Welsh Coulee
LaCrosse, WI 54601
(608) 786-0611

VETERANS ADMINISTRATION HOSPITAL

7th Street and Indian School Rd., Phoenix, AZ 85012. Sponsor: VA Hospital. Contact: Jasper L. McPhail, M.D. Approved for category 1 credit.

Academic Surgery Conference
Each Thursday — 2 p.m. — C435
Dr. Cannon, Ext. 493.

Cancer Symposium
Each Wednesday — 1 p.m. — T5
Dr. Berkley, Ext. 419.

Cardiology Conference
2nd Thursday — 1 p.m. — T5
Dr. Habibzadeh, Ext. 348.

Clinical Conference
4th Thursday of 3rd Month
(Mar., Jun., Sept., & Dec.)
1 p.m. — T5
Dr. Likos, Ext. 623.

Dermatology Conference
1st, 2nd, & 3rd Wednesday
(usually, but is subject to change)
10 a.m. — C118
Dr. Roberts, Ext. 426.

G.I. Radiology Clinical Correlation Conference
1st & 3rd Monday — 1 p.m. — C435
Dr. Sanowski, Ext. 618.

G.I. Grand Rounds
Each Tuesday — 1 p.m. — T5
(4th Thursday with U of A Consultants)
Dr. Sanowski, Ext. 618.

Medical Service Grand Rounds
Each Friday — 11 a.m. — T5
Dr. Zeller, Ext. 272.

Medical-Surgical Chest Conference
1st and 3rd Thursday — 1 p.m. — T5
Dr. Chowdhury, Ext. 388.

Medical-Surgical G.I. Conference
1st & 3rd Friday — 2 p.m. — 2128
Dr. Sanowski, Ext. 618.

Surgery Grand Rounds
Thursday — 3 p.m. Rm. C-435.

Surgery-Pathology Conference
Each Thursday — 2 p.m. — 2128
Dr. Cannon, Ext. 493, &
Dr. Likos, Ext. 623.

Urology-Pathology Conference
Each Wednesday — 7 a.m. — 2128
Dr. Likos, Ext. 623, &
Dr. Pentenney, Ext. 417.

WHAT CAN BE DONE TO PREVENT MENTAL RETARDATION AND MANY TYPES OF BIRTH DEFECTS?

The *Mental Retardation Association of Utah* in conjunction with the University of Utah Medical Center, Utah State Division of Family Services, Utah State Division of Health, Utah Nurses Association and the Utah State Training School are sponsoring the

2nd ANNUAL BIRTH DEFECTS MENTAL RETARDATION AND MEDICAL GENETICS SYMPOSIUM

December 11–12, 1978

at the Salt Lake Hilton 150 West 5th South, Salt Lake City, Utah

The symposium is designed to update practicing physicians, nurses and other health professionals on recent advances in the fields of birth defects, mental retardation and medical genetics. The symposium meets the criterion for continuing education credits from the American Medical Association and the American Nurses Association.

For a description and registration materials, contact MRAU 211 East 3rd South, Suite 212, Salt Lake City, Utah 84111 or call (801) 328-1575.

Hotel reservations should be made directly with the Hilton Hotel for the Birth Defects Symposium—MRAU.

Taos Medical Symposium

Announcing the 6th Annual Symposium

February 13-17, 1979 Holiday Inn, Taos, New Mexico

14 hours CME credit applied for from AAFP and AMA

Topics covering:

- Exercise and the Heart (6 hrs.)
- Gastroenterology (4 hrs.)
- New Drug Therapy & Trauma (4 hrs.)

Additional activities with special four-day group rates scheduled at Taos Ski Valley.

Advance registration required. Registration fee of $100.00 includes continental breakfast for two each morning and two hosted receptions. Registration deadline January 31, 1979. Limited to 100 participants.

For further information contact:

Albuquerque & Bernalillo County Medical Association
2650 Yale Blvd., SE Suite 103
Albuquerque, New Mexico 87106
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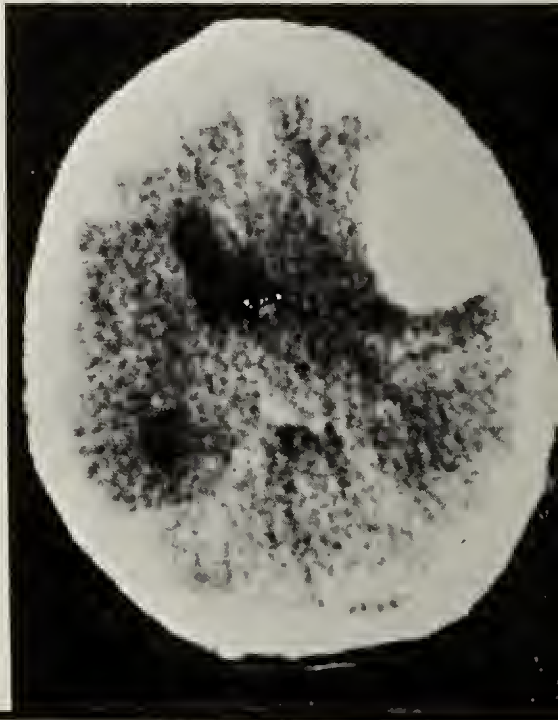

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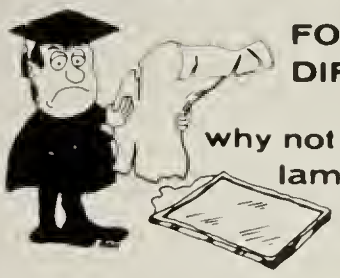

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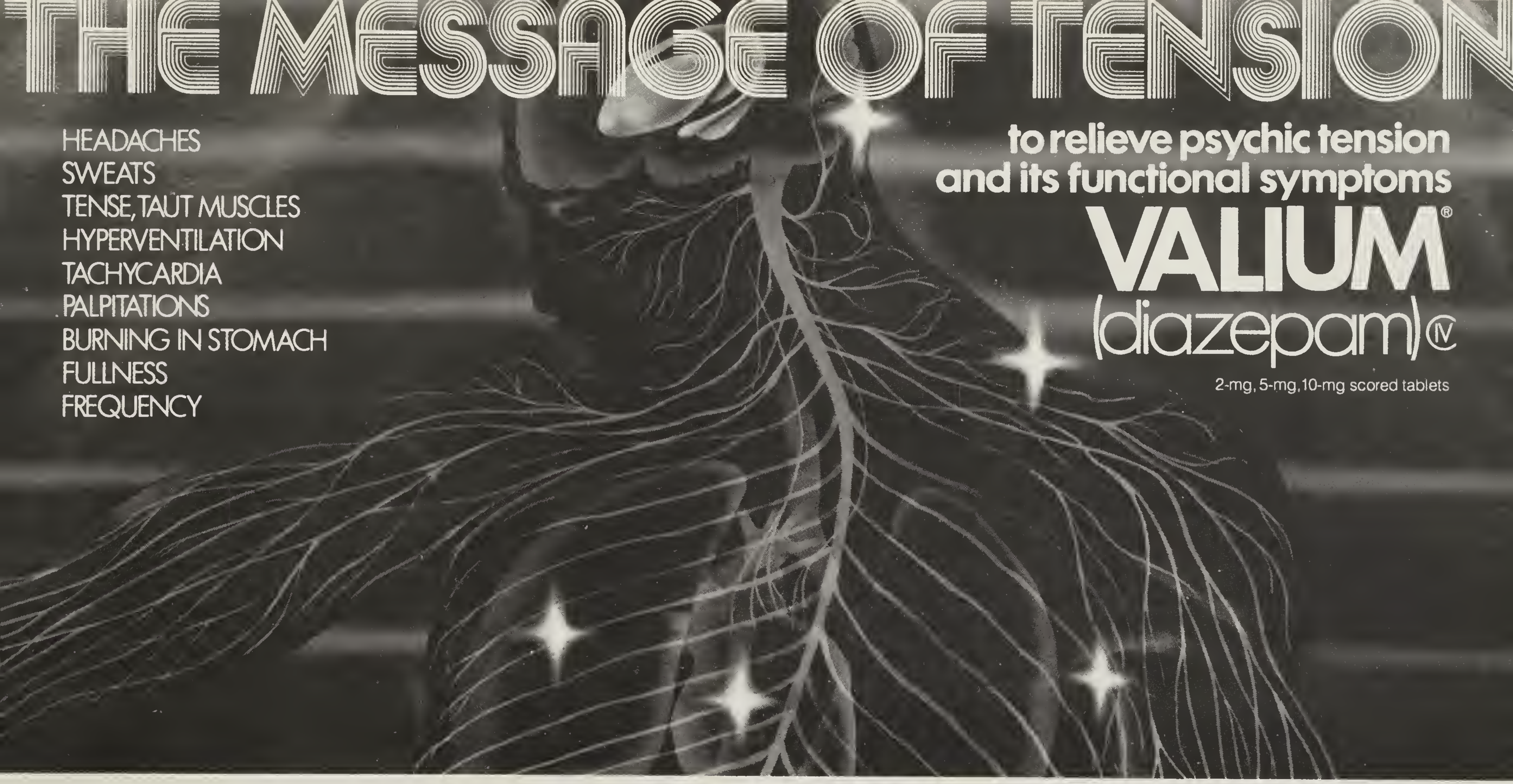

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Before prescribing, please consult complete product information, a summary of which follows:
Indications: Tension and anxiety states; somatic complaints which are concomitants of emotional factors; psychoneurotic states manifested by tension, anxiety, apprehension, fatigue, depressive symptoms or agitation; symptomatic relief of acute agitation, tremor, delirium tremens and hallucinosis due to acute alcohol withdrawal; adjunctively in skeletal muscle spasm due to reflex spasm to local pathology; spasticity caused by upper motor neuron disorders; athetosis; stiff-man syndrome, convulsive disorders (not for sole therapy).
The effectiveness of Valium in long-term use, that is, more than 4 months, has not been assessed by systematic clinical studies. The physician should periodically reassess the usefulness of the drug for the individual patient.

Contraindicated: Known hypersensitivity to the drug Children under 6 months of age. Acute narrow angle glaucoma; may be used in patients with open angle glaucoma who are receiving appropriate therapy
Warnings: Not of value in psychotic patients. Caution against hazardous occupations requiring complete mental alertness. When used adjunctively in convulsive disorders, possibility of increase in frequency and/or severity of grand mal seizures may require increased dosage of standard anticonvulsant medication; abrupt withdrawal may be associated with temporary increase in frequency and/or severity of seizures. Advise against simultaneous ingestion of alcohol and other CNS depressants Withdrawal symptoms (similar to those with barbiturates and alcohol) have occurred following abrupt discontinuance (convulsions, tremor, abdominal and muscle cramps, vomiting and sweating). Keep addiction-prone individuals under careful surveillance because of their predisposition to habituation and dependence

***Usage in Pregnancy:* Use of minor tranquilizers during first trimester should almost always be avoided because of increased risk of congenital malformations as suggested in several studies. Consider possibility of pregnancy when instituting therapy; advise patients to discuss therapy if they intend to or do become pregnant.**
Precautions: If combined with other psychotropics or anticonvulsants, consider carefully pharmacology of agents employed, drugs such as phenothiazines, narcotics, barbiturates, MAO inhibitors and other antidepressants may potentiate its action. Usual precautions indicated in patients severely depressed, or with latent depression, or with suicidal tendencies Observe usual precautions in impaired renal or hepatic function. Limit dosage to smallest effective amount in elderly and debilitated to preclude ataxia or oversedation
Side Effects: Drowsiness, confusion, diplopia, hypotension, changes in libido, nausea, fatigue, depression, dysarthria, jaundice, skin rash, ataxia, constipation, headache, incontinence, changes in salivation, slurred speech, tremor, vertigo, urinary retention, blurred vision Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances, stimulation have been reported; should these occur, discontinue drug. Isolated reports of neutropenia, jaundice, periodic blood counts and liver function tests advisable during long-term therapy.

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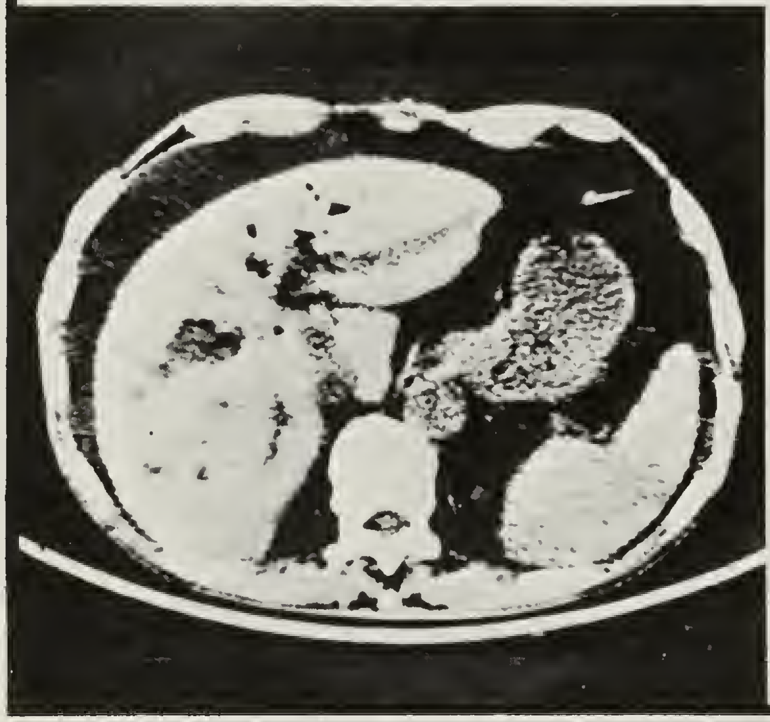

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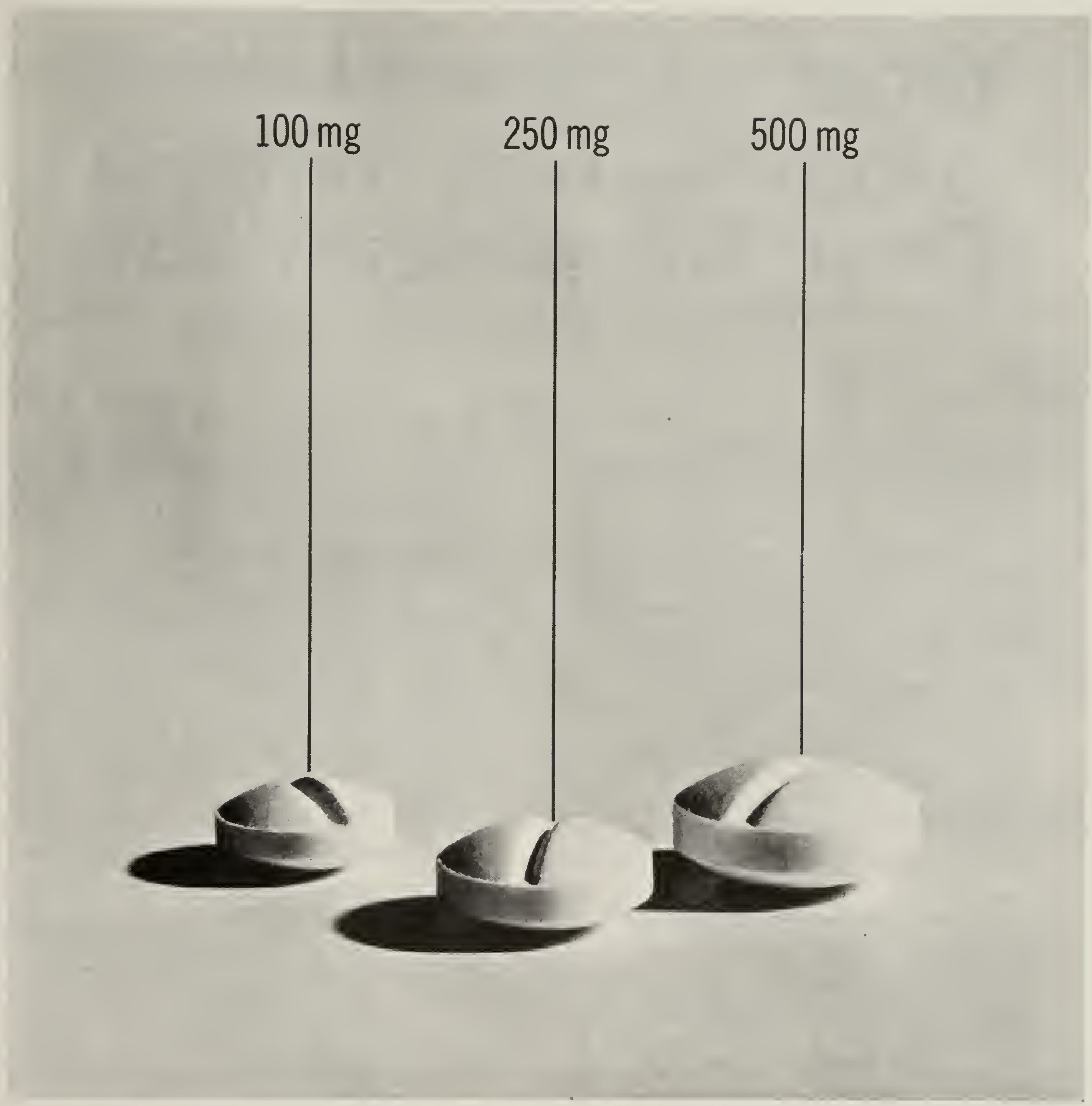

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What you ~~should~~ must know about the new Arizona Drug Substitution law

As of January 1, 1979, the state legislature dramatically changed the lawful way of prescribing drugs and of writing a prescription. Until now, writing the brand name of a drug on the prescription was enough to ensure that the brand-name drug would indeed be dispensed. Now that no longer suffices. Unless the physician takes the necessary extra steps, for many drugs the pharmacist may substitute an "equivalent" generic drug where available.

Key points for the physician in writing prescriptions

- "Every prescription form in the state of Arizona should contain two signature lines for the prescriber."
- "The right side of the prescription form shall contain under the signature line the phrase 'substitution permissible'. The left side shall contain under the signature line the phrase 'dispense as written'."

NOTE:

- "In the instance of an oral prescription, the registrant shall note the prescriber's instructions on the face of the prescription."
- "When a substitution is made... the registrant shall include on the label of the container the name of the dispensed drug and the name of the manufacturer of the dispensed generic drug."

℞

dispense as written

substitution permissible

J8MK06

The decisions the physician must make

The physician should acquaint himself with the newly mandated prescription form illustrated on the preceding page. This form requires a distinct change from the way he has previously written prescriptions.

There are now *two* lines for the prescriber's signature. The prescription may be filled generically unless the physician signs on the line stating "dispense as written." Special note should be made of the position of this line in the lower *left* of the prescription form rather than on the right, where the physician has customarily signed prescriptions. Only by signing on the left side can he ensure that the brand-name drug will be dispensed.

If the physician elects to permit substitution, he must indicate this by signing on the line marked "substitution permissible." This line is in the lower right hand corner of the prescription form.

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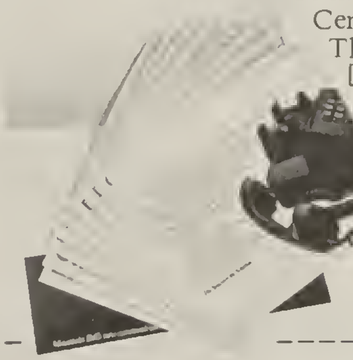

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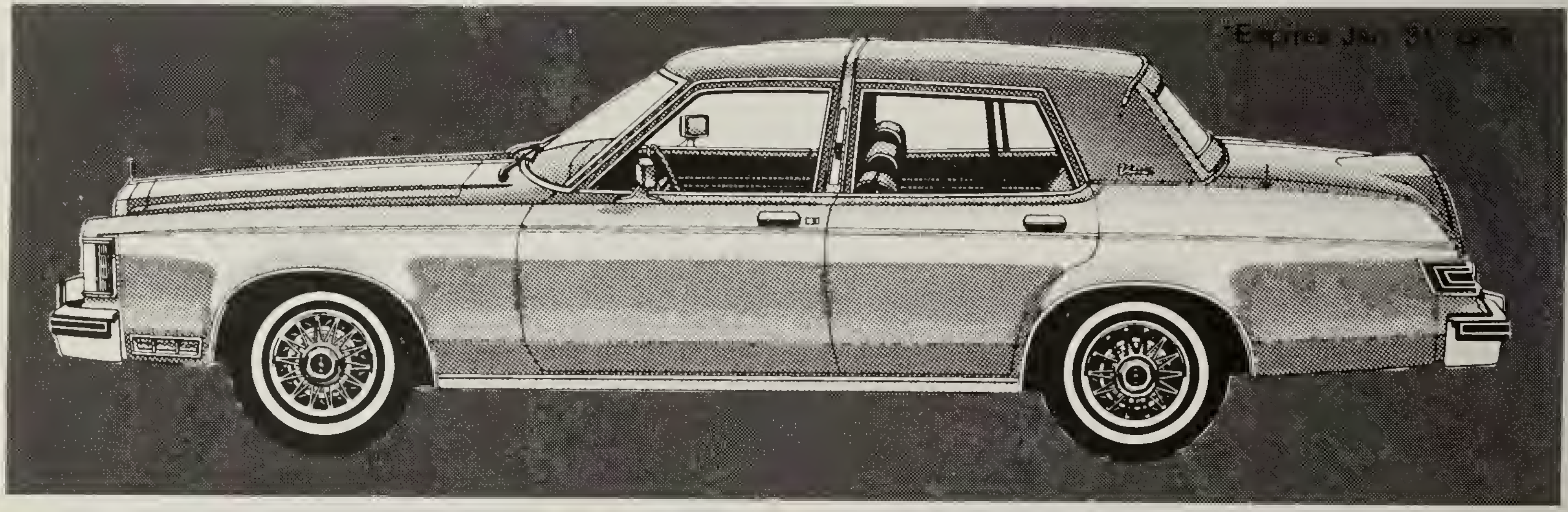

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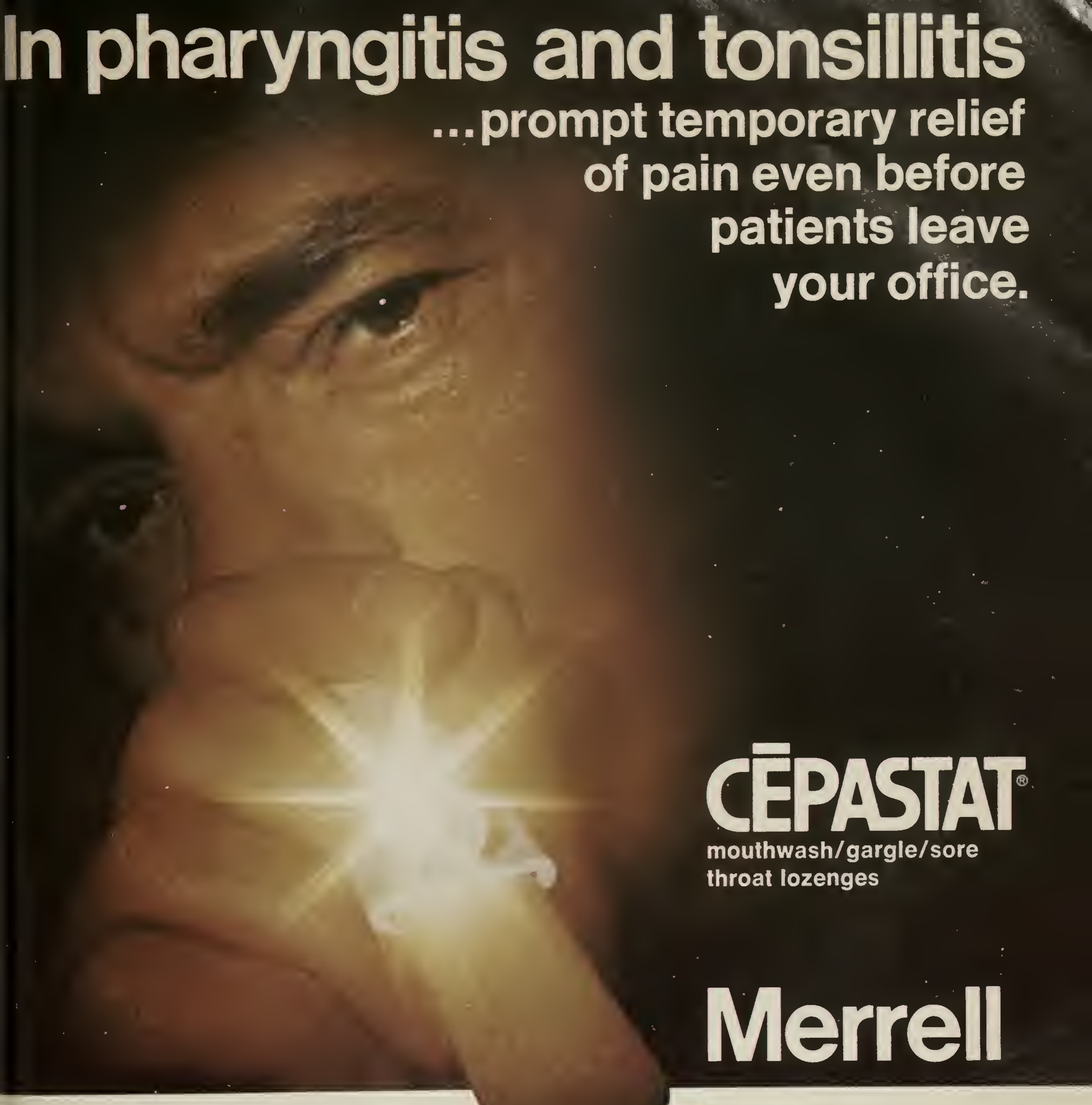

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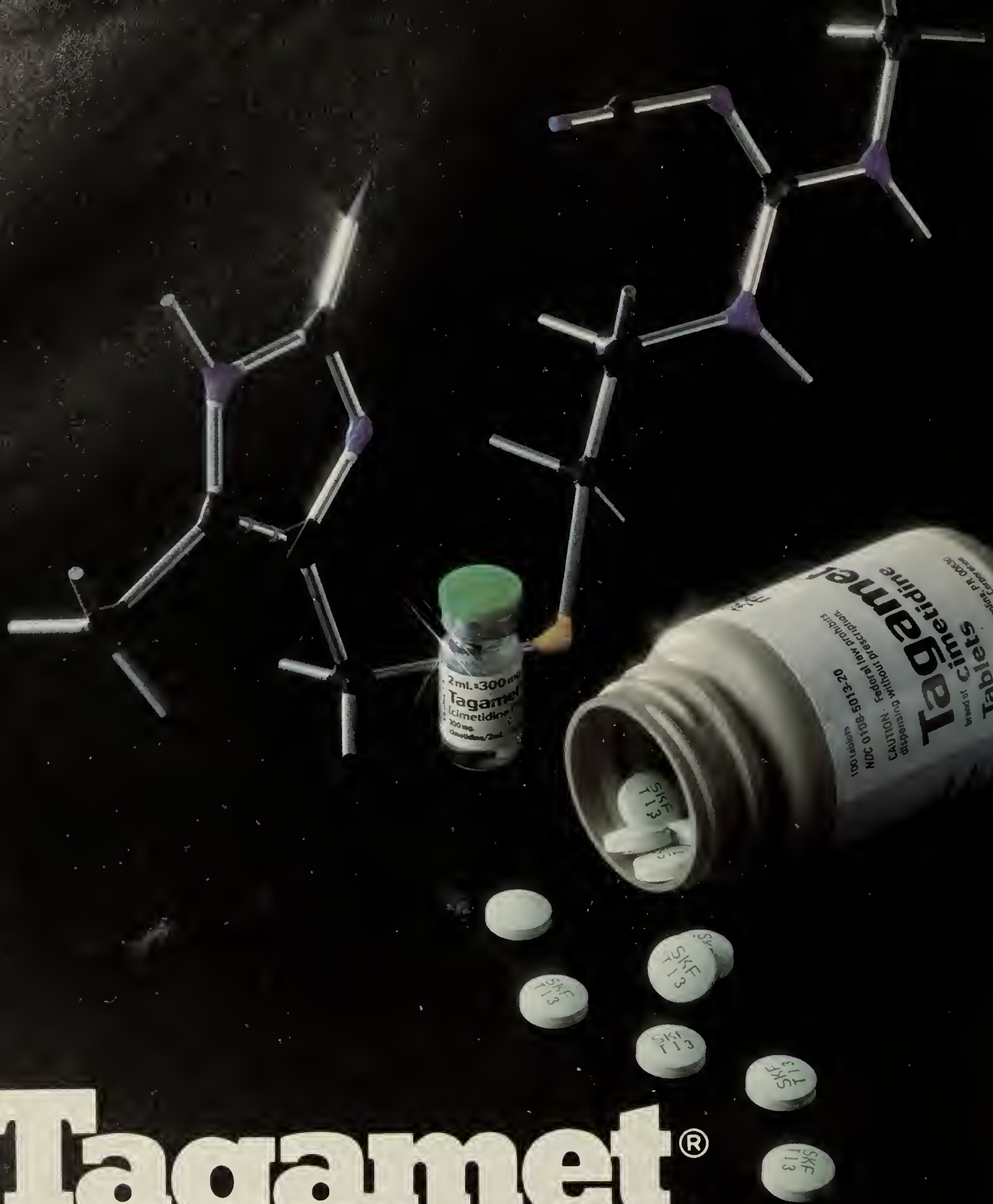

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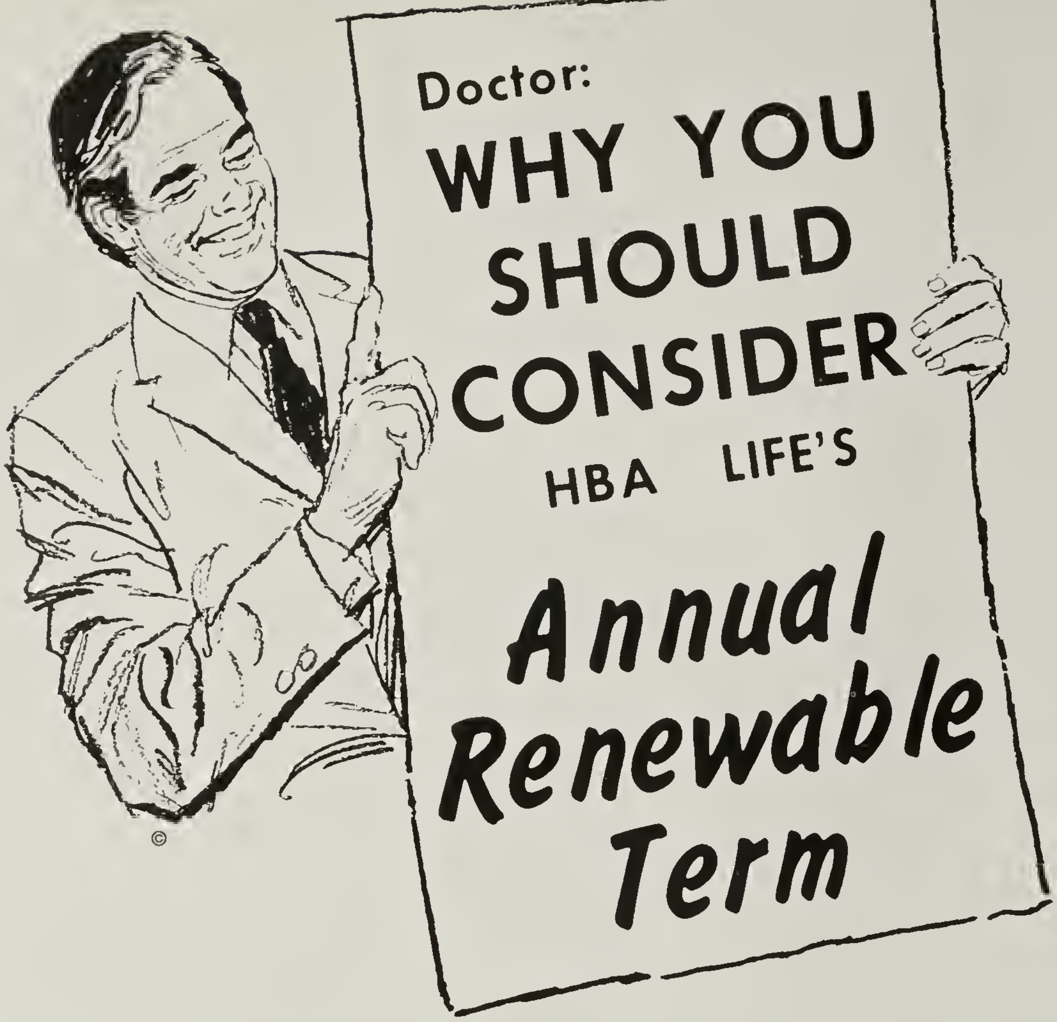

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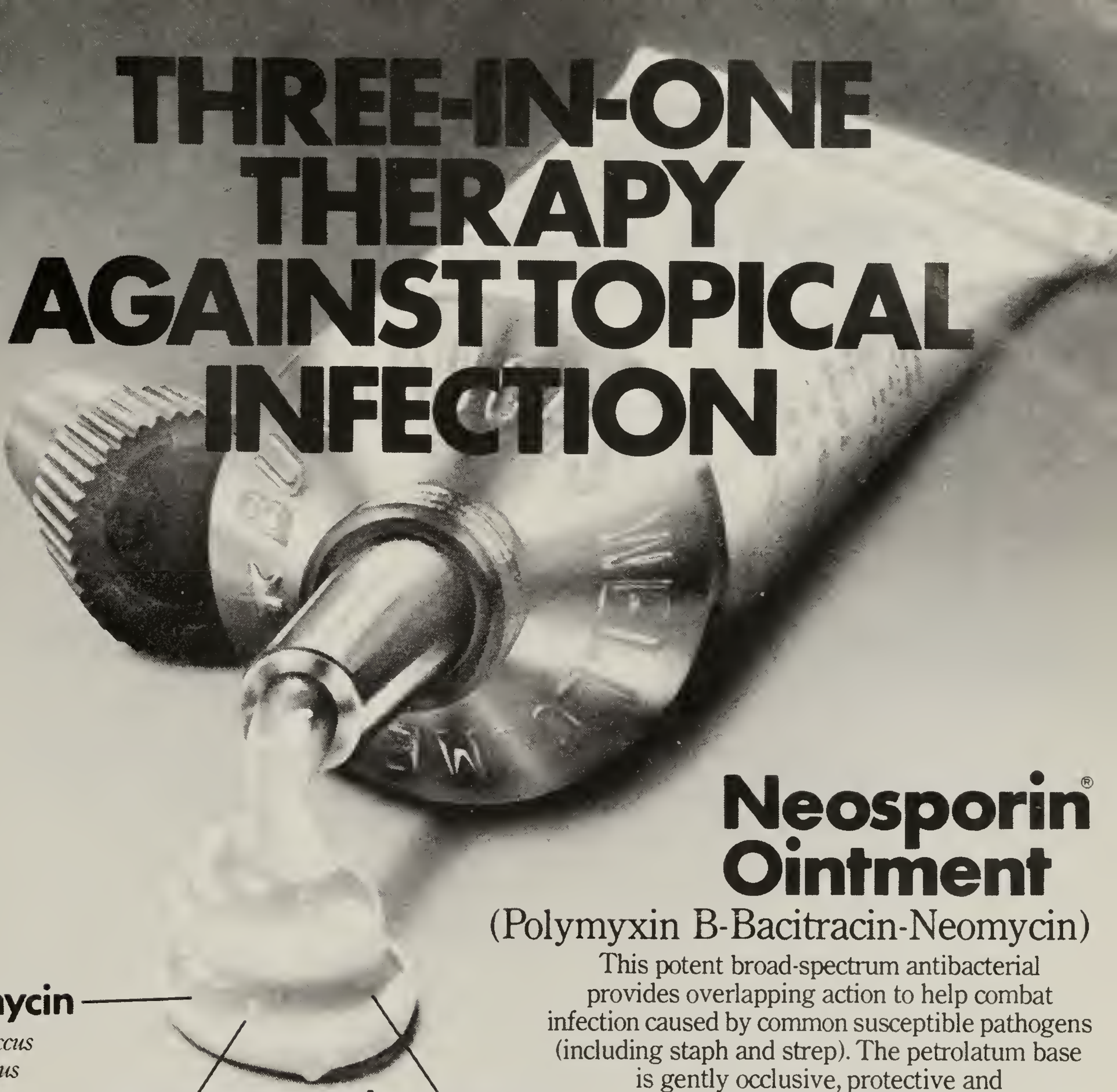

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PRECAUTIONS: As with other antibacterial preparations, prolonged use may result in overgrowth of nonsusceptible organisms, including fungi. Appropriate measures should be taken if this occurs.

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Complete literature available on request from Professional Services Dept. PML.

THE CHICAGO DEPARTMENT OF HEALTH

NEWS LETTER

VOL. 18, NO. 1, MAY, 1978

AUTOMATIC BLOOD PRESSURE DEVICES

A Chicago Department of Health report on the Vita-Stat automated blood pressure machines concludes that their consistency and accuracy is sufficient for screening purposes.

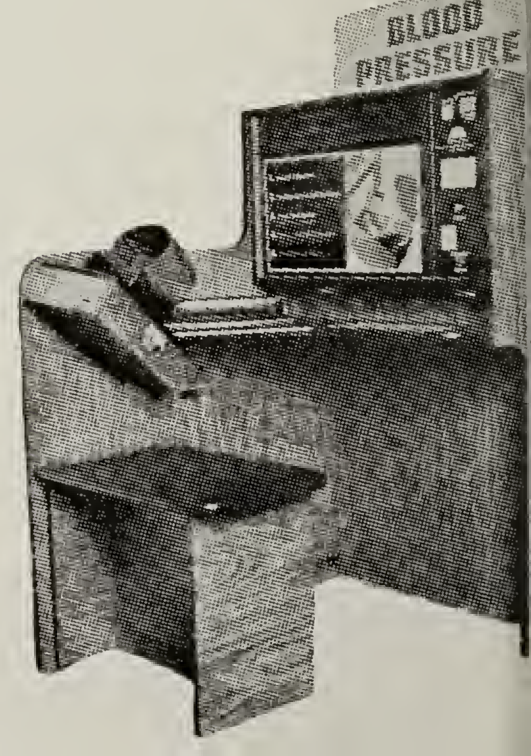
The report, the first in the nation based on a scientific study by a public agency, was prepared under the direction of Dr. David M. Berkson, the Department's heart disease control officer. It consists of (1) a statistical evaluation by Drs. Shekelle and Raynor of Rush-Presbyterian St. Luke's Medical Center, based on data collected over a four month period by Lawrence Shireman and Thomas Whipple and their co-workers in the Health Department, and (2) an evaluation of the results with recommendations for regulatory actions if deemed necessary. The report notes at the outset that any assessment of automatic blood pressure devices must compare their measurements with measurements by trained observers recorded by the traditional cuff ausculatory method. Since blood pressure may vary rapidly, the assessment of accuracy of measurement is difficult.

"In our evaluation of the Vita-Stat machine," the report states, "we found that, when the machine and a trained observer measure blood pressure simultaneously, there is a very good agreement." It is essential, however, that a machine must perform well in sequential measurement with trained observers as well as in simultaneous measurement. In sequential measurement the machine, in general, has a fair degree of accuracy. It does not perform as well, however, as trained technicians. In the laboratory analysis of the comparison between one machine and several technicians the machine tended to read systolic pressure 3.4mm higher and diastolic pressure 2.3mm lower. In the field analysis the machine tended to read systolic blood pressure 1.5mm and diastolic pressure 0.5mm higher than the technicians.

Although agreement between technicians in mean blood pressure measurement and in categorizing persons as normal, borderline or hypertensive tends to be closer than technician-machine agreement, these differences are small and of little practical significance in screening.

The report recommends that if licensing is insituted by the City of Chicago, periodic recalibration and testing should be required. The public must be informed that these instruments serve merely as screening devices; that they do not replace medical consultation and that, because blood pressure is subject to variation, several elevations or lack of elevations do not constitute a diagnosis of hypertension or normotension.

Blood pressure readings must be interpreted by a qualified medical professional and self-adjustment of medication based on automated blood pressure readings without medical supervision may be dangerous. The report concludes "that although the Vita-Stat machine does not perform as well as trained technicians, its consistency and accuracy is sufficient for screening purposes."



Seminars in Endocrinology and Metabolism

Unilateral Exophthalmos:

An Unusual Presentation of Primary Hyperparathyroidism

Marshall B. Block, M.D., F.A.C.P.
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Editors:
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Unilateral exophthalmos due to a "brown tumor" of bone secondary to excessive parathormone secretion is quite unusual. We would like to report the occurrence of such a lesion in a 13-year-old boy due to primary hyperparathyroidism which was initially misdiagnosed as a retro-orbital giant cell tumor. The unique features of this patient in addition to his presentation with proptosis include his young age, the difficulty in making the correct histological diagnosis, the palpable parathyroid adenoma and his multiple bone lesions.

CASE REPORT: This 10-year-old boy was first noted in December of 1973 to have increased bulging of his right eye. He was seen elsewhere by several physicians and unilateral exophthalmos was ultimately diagnosed. Peripheral thyroxine measurements were normal and his orbit was explored and found to contain a large giant cell tumor involving the maxillary sinus and maxilla. The slides were sent to an outside independent bone pathologist (Dr. Lichtenstein) who confirmed that it was a giant cell tumor. A tumoricidal dose of cobalt irradiation was administered. Ten months later radiographs of his proximal right tibia following a bicycle accident revealed "a simple cyst and a cortical defect in the anterior medial aspect of the tibia that was lytic in appearance". He was then referred to an orthopedist for bone biopsy. Biopsy of the tibial region revealed an overabundance of osteoblastic activity with some giant cells suggestive of a "brown tumor". (Figure 1) Laboratory studies initiated at the time of his admission and subsequently reported after the biopsy of the tibia was completed revealed a serum

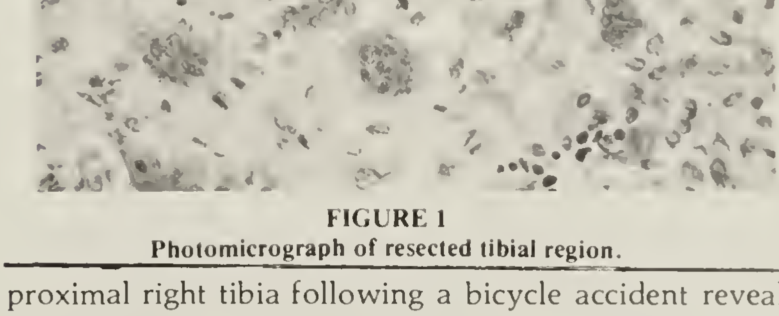

FIGURE 1
Photomicrograph of resected tibial region.

From: Department of Medicine, Orthopedics and Pathology, St. Luke's Hospital Medical Center, Phoenix, AZ 85006. Reprint requests to Dr. Block, Endocrinology Associates, P.A., 3411 N. Fifth Ave., Phoenix, AZ 85013.

calcium of 13.3 with a serum albumin of 4.3 grams/100 ml. An alkaline phosphatase was elevated to 945 (normal less than 45). His carbon dioxide combining power was 21. His past medical history was unremarkable and his family history gave no evidence for any familial endocrinopathies.

On physical examination there was a slight ptosis of the right lid compared to the left with slight asymmetry of the facial region due to decreased facial bone development on the right side. Examination of the neck revealed a globular lesion on the left side of the neck in the region of the left lobe of the thyroid gland. The right lobe of the thyroid gland appeared normal in size. No discrete nodules per se were felt within the gland although this globular structure was thought to represent the left lobe of the thyroid gland as it was freely moveable with deglutition and no lymph adenopathy was felt in the neck. Overall gland size was estimated to be 35 grams. The rest of the examination was normal with the exception of the region where the bone biopsy was performed.

More extensive laboratory studies were then obtained which continued to reveal persistent hypercalcemia (12.5 to 13.5 mg./dl.). Serum phosphorous measurements were less than 2 mg./dl. on multiple occasions. A radioactive I-131 uptake and scan showed a defect in the left lobe of the thyroid gland corresponding to the palpable abnormality. The thyroid gland itself did not appear to be enlarged. On esophageal swallow the esophagus was deviated to the right in the region where this palpated nodule was felt. Multiple bone radiographs disclosed radiolucent lesions scattered throughout his skeleton. A representative view is shown in Figure 2.

A neck exploration was performed and an enlarged left inferior parathyroid adenoma was resected. The remaining three parathyroid glands were localized and found to be normal in size. The initial orbital histological slides were re-sent to Dr. Lichtenstein who continued to feel that they demonstrated a giant cell tumor although he admitted that the differential between such a lesion and a brown tumor is sometimes difficult.

Subsequently, the patient's serum calciums gradually declined to normal and his serum phosphorouses rose to 4.5 mg./dl. Serial alkaline phosphatase determinations showed a gradual decline over a two year period to normal. The lytic lesions seen on multiple views of his skeleton over a two year period of time have healed.

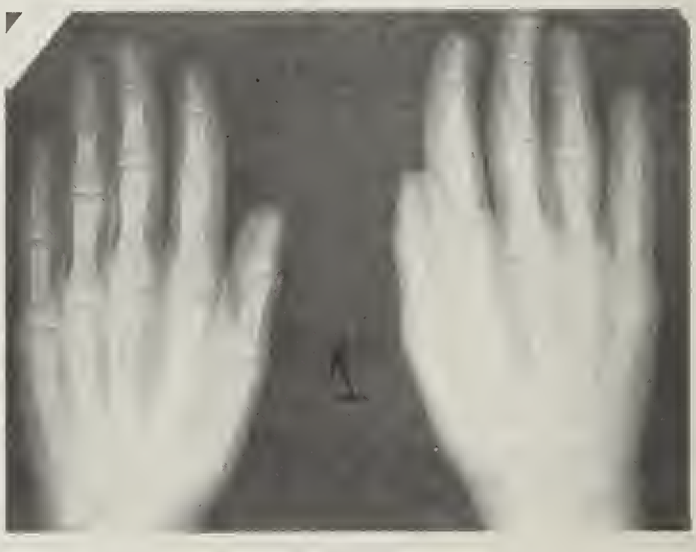

FIGURE 2
X-radiograph of both hands show radiolucent lesions.

DISCUSSION: The occurrence of unilateral exophthalmos secondary to a brown tumor in a young patient with primary hyperparathyroidism is rare. Recently, a similar presentation has been noted due to tertiary hyperparathyroidism in a patient with chronic renal failure. The important features of our patient's presentation include the difficulty in making the histological diagnosis even in experienced hands. It would seem prudent that when a giant cell tumor is diagnosed, serum calcium determinations should be routinely obtained to avoid the pitfalls of this case.

Although it is usually stated that parathyroid adenomas are nonpalpable, the large size of the tumor and probably the lean body mass of the patient enabled his adenoma to be detected clinically. The lack of I-131 uptake over the region and the deviation of the esophagus away from the lesion further supported the possibility that this was a parathyroid adenoma and not a thyroid nodule.

In summary, primary hyperparathyroidism can present as unilateral exophthalmos secondary to a "brown tumor". Differentiating it from similar histological tumors is essential for correct patient management. Even with expert confirmation of the histology present, the diagnosis of primary hyperparathyroidism continues to be difficult.

ACKNOWLEDGEMENTS

Drs. L. Nilson and S. Dippe provided critical comments in the formative stages of the manuscript and their help is appreciated.

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Seminars in Gastroenterology and Liver Disease

Aspirin and the Stomach

Stephen Glouberman, M.D.

Editors:
Leon Rigberg, M.D.
Stephen Glouberman, M.D.
George Burdick, M.D.

Aspirin was first introduced into clinical medicine in 1899. Shortly thereafter, it was recognized that aspirin was a gastric irritant, and could give rise to dyspepsia, heartburn and epigastric distress. The association between gastrointestinal bleeding and aspirin use was first recognized in 1938. Since then, numerous articles have appeared describing the clinical, radiological and histological manifestations of this drug on the stomach, and much has been learned about the pathophysiology of this reaction.

Aspirin and Gastric Erosions.

Approximately 2 ccs. of blood are lost daily in the stool of a normal individual without gastrointestinal complaints. Following the ingestion of as little as two 300 mg. aspirin tablets, about one-half of normal subjects will have about 5-6 ccs. of blood in the stool. This phenomenon is unrelated to the presence of dyspepsia, and the same amount of blood is lost when aspirin is taken on an empty stomach as after a meal. However, dyspepsia is much more common when aspirin is taken on an empty stomach. Patients with ulcers are not any more susceptible to occult bleeding than are patients without active ulcers.[1] Ten minutes after the ingestion of 2 or 3 aspirin tablets, gastroscopy revealed mucosal congestion or bleeding in 43% of patients so examined. These lesions were not present prior to ingestion of the tablets.[2]

Although more blood is present in the stools following aspirin use than without it, usually this amount of bleeding is not of clinical significance. However, in patients admitted to a hospital with massive upper gastrointestinal hemorrhage, nearly 50% took aspirin regularly, up to the commencement of the hemorrhage. Dyspepsia

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From: 3411 N. 5th Ave., Ste. 503, Phoenix, AZ 85013.

from aspirin just prior to the onset of bleeding was distinctly uncommon. Furthermore, massive hemorrhage is more likely in patients with previous dyspepsia who use aspirin.[3]

The pH of the gastric contents plays an important role in the occurrence of aspirin induced occult bleeding. When aspirin was given with $NaHCO_3$ to normal students, no gastric mucosal lesions were seen on gastrophotography. However, the combination of aspirin and HC1, sufficient to decrease the gastric pH to 1.4 - 2.0, resulted in petechiae and ecchymoses of the gastric mucosa in 10 of 20 subjects, and 6 had gross bleeding.[4]

Histologically, mucosal petechiae, ecchymoses and occasionally fresh bleeding is seen. Ten minutes after aspirin is ingested, focal cell disruption, loss of mucous granules and apical membrane rupture is seen on biopsy of the gastric mucosa. It is estimated that about 25% of cells are damaged at 10 minutes, but one hour later less than 10% of cells show the same changes.[5] The prior or concomitant administration of sodium bicarbonate or cimetidine largely prevents these changes. This concept will be discussed further under "Pathophysiology".

Aspirin and Gastric Ulcer.

Occasional use of aspirin, as described above, can result in occult bleeding, gastric erosions, or even massive hemorrhage. More prolonged use of this drug, furthermore, has been associated with the development of gastric ulcer. Over 50% of patients with gastric ulcer used more than 15 aspirin per week.[6] Of ulcers associated with aspirin use, 90% were located in the gastric antrum. The size of the gastric ulcer in a patient who uses aspirin is no different from that of a patient who does not use aspirin.

One interesting feature of gastric ulcer associated with aspirin use is the absence of an antral gastritis. MacDonald studied 51 gastrectomy specimens from gastric ulcer patients.[7] Forty-four of these specimens had inflammation in the pyloric gland area. Eight of the 51 patients used aspirin regularly, and 7 had no antral gastritis. All 8 patients had antral ulcers.

Pathophysiology.

Aspirin, or acetylsalicylic acid, (ASA), is an organic acid with a pKa of 3.5. This means that at a pH of 3.5 half of the molecules present are in the unionized form and half in the ionized form. At a pH lower than 3.5, more of the compound is present in the unionized form, and at a pH higher than 3.5, the ionized fraction predominates. At pH2, aspirin is 95% unionized, and at pH7, it is completely ionized and soluble in water. The unionized form is soluble in lipid, so that in the presence of acid, as in the stomach (with a basal pH of 2.3), ASA can cross the lipid membrane of the gastric mucosal cell. Following the ingestion of 600 mgs. of ASA, the gastric pH is 2.0.

In a series of experiments on dogs, Davenport found that in acid solutions, aspirin damages the gastric mucosa.[8] This injury did not occur when the pH was buffered to 5 or greater. With the equivalent of 2 aspirin tablets placed in 180 ml of gastric juice, there is an outpouring of fluid into the lumen. This fluid is rich in sodium, potassium and chloride, and if the injury is severe, plasma, and finally red blood cells appear. Hydrogen ions leave the luminal fluid and diffuse back into the mucosa. He postulated that ASA crosses the lipid membrane and causes desquamation of apical cells (erosions) by breaking the tight junctions at the lateral border of these cells. This results in an abnormal mucosal permeability and hydrogen ions enter the mucosa, and sodium, potassium and chloride move to the lumen. The hydrogen ion then results in the release of histamine. This is a vasodilator, and with injury to the engorged capillaries, first proteins, and then red blood cells pass from these capillaries into the interstitial fluid, and then through the damaged mucosal channels into the lumen. The abnormal capillary permeability is greater for proteins than it is for red blood cells, so that the hematocrit of the luminal fluid is usually less than that of blood. The severity of the mucosal injury determines the extent of the above events. If the initial damage is severe, the above chain of events can continue even after the offending aspirin has been removed from the lumen. Other investigators have described similar findings in man.

If the pH of the gastric mucosa is greater than 3.5, aspirin is in its ionized form, is not lipid soluble and cannot traverse the cell membrane. It can pass through pores in the tight junctions, but does so only to a minimal degree. This pH can be achieved by bicarbonate and antacids in sufficient amount, and cimetidine. These agents have been shown to decrease the dyspepsia, erosive changes and blood loss associated with aspirin use.

Summary.

Aspirin remains as one of the most useful and used drugs. However, its long term use can be complicated by the development of significant or even life threatening gastrointestinal hemorrhage. Patients who are on chronic aspirin therapy should be monitored for the possible development of problems as discussed above. Concomitant use of antacids in these patients should be considered. The prescribing of cimetidine with long term aspirin use is not recommended at the present time.

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Neurology

The Evaluation of Low Spinal Fluid Glucose

Eric R. Erlbaum, M.D.

Editors:
Betty F. Ball, M.D.
Barry Hendlin, M.D.
Lawrence Z. Stern, M.D.

The measurement of glucose is part of the routine examination of the cerebrospinal fluid (CSF). Values below normal limits, hypoglycorrachia, are useful for diagnosis.

CSF is an ultrafiltrate of blood and contains glucose levels of 60 to 70% of the serum glucose. Consequently, a serum glucose of 80 to 120 mg% should have a concomitant CSF glucose of 45 to 80 mg%. As the serum glucose increases, the CSF glucose increases in a linear fashion. However, as the serum glucose approaches 400 mg%, a transport maximum (Tmax) is established similar to the Tmax of renal glucose transport (see figure 1).

It takes 90 to 120 minutes for spinal fluid glucose to re-equilibrate with the serum glucose. When blood CSF ratios are important, the patient should be fasting.

Hypoglycorrachia occurs in a variety of neurological diseases. The best known is bacterial meningitis. Although organisms like Streptococcal Pneumoniae, Hemophilus Influenza, and Neisseria Meningitidus are most common, all bacterial meningitides have been associated with hypoglycorrachia. Commonly CSF sugars fall below 30 mg% and some as low as 0 mg%. There is no correlation between the bacterial organism and the level of hypoglycorrachia, nor does a correlation exist between mortality and the level of hypoglycorrachia. The CSF glucose may remain low for one to two weeks following an appropriate course of antibiotics while the cell count and protein may have already returned to normal.

CNS fungal infections including Coccidiodomycosis Immitans, the most common in Arizona, and Cryptococcal Neoformans, the most common nationally, produce hypoglycorrachia. The degree of hypoglycorrachia is not as dramatic nor as consistent as in bacterial infections. Interestingly, no cases of Mucormycosis have been reported with low CSF glucose levels. Probably poor diabetic control with high serum sugar levels is responsible. Improvement in CSF glucose levels correlates with clinical improvement.

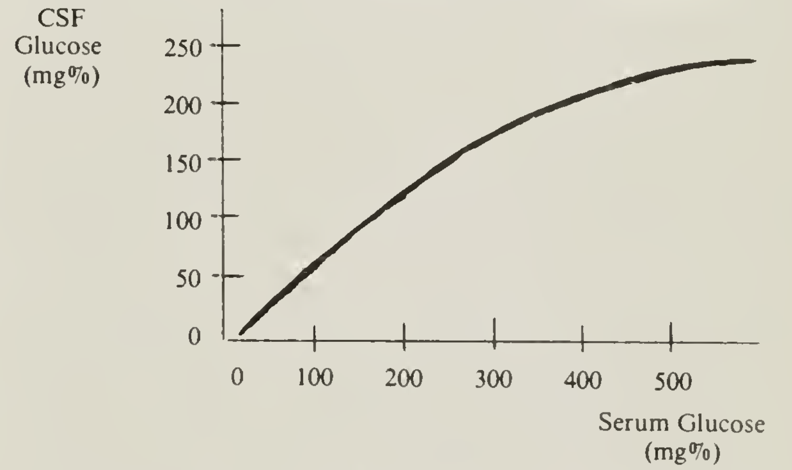

FIGURE 1

Viral infections may also be associated with hypoglycorrachia. In forty-five patients with mumps, fourteen or 33% had CSF glucose measured below 40 mg%. Sporadic cases of hypoglycorrachia have been described with Herpes Simplex Encephalitis, Lymphycytic Choriomeningitis, Eastern Equine Encephalitis, and Coxsachie B-2 Encephalitis.

Besides CNS infections, meningeal carcinomatosis causes hypoglycorrhia. The most frequent tumors that seed the meninges are mucin secreting tumors of the GI tract, lymphomas, leukemias, melanomas, and medulloblastomas.

In sarcoid meningitis hypoglycorrachia is seen with a mononuclear pleocytosis. Anterior uveitis and facial nerve palsies suggest the diagnosis.

From: Barrow Neurological Institute, 350 W. Thomas Rd., Phoenix, AZ 85013.

CAUSES

- Bacterial Meningitis
- Tuberculous Meningitis
- Fungal Meningitis
- Viral Meningitis
  - Mumps
  - Herpes Simplex
  - Eastern Equine
  - Coxsachie B-2
  - Lymphocytic Choriomeningitis
- Sarcoidosis
- Carcinomatous Meningitis
  - Mucin tumors of the GI tract
  - Lymphoma
  - Leukemia
  - Melanoma
  - Medulloblastoma
- Subarachnoid Hemorrhage

Another interesting cause of hypoglycorrachia is subarachnoid hemorrhage. While CSF glucose is seldom critically evaluated, low values usually occur six to eight days after the hemorrhage. This is the peak time of meningeal irritation, so a pleocytosis occurs as well.

Infrequently, hypoglycorrachia can follow the intrathecal injection of radioactive iodinated serum albumin which has been used for studying CSF dynamics in normal pressure hydrocephalus.

The mechanism of low spinal fluid glucose is incompletely understood. The common denominator, in all of these diseases, is meningeal inflammation. In bacterial meningitis, the low glucose levels were initially attributed to the glycolytic effect of the microorganisms. Some bacteria consume glucose avidly, but in vitro studies suggest far more organisms are needed than found in the CSF to reduce glucose to clinically significant low levels. Polymorphonuclear leukocytes (PMNs) increase glucose consumption. PMNs added to sterile CSF the lower the glucose content. If one combines multiplying organisms and PMNs, a syngergistic lowering of the glucose seems to occur. These experiments do not explain the hypoglycorrachia associated with either TB or fungal meningitides where there is a paucity of organisms and a generally sparse lymphocytic cellular response.

Some investigators have suggested reduction in oxidative enzymes may cause increased use of glucose by anerobic metabolism. However, while lactate levels are elevated in bacterial and tuberculous meningitis, they are not elevated in viral infections. Minimal decreases of oxidative enzymes in the neutrophil occur with tissue damage. Decreased oxidative enzymes have also been observed in cerebral anoxia and minimal head trauma, but neither is associated with hypoglycorrachia.

Although some glucose gets into the spinal fluid by simple diffusion, elegant studies done by Fishman[8] have demonstrated a "carrier transport" or "facilitated diffusion" mechanism. This theory presumes a non-energy dependent mobile carrier combining reversibly with the lipid insoluble molecule of glucose. The carrier oscillates back between the vascular endothelium and the ependymal endothelium. The equilibration between serum and CSF glucose is related to the rate limiting transport in the complex of membranes. The return of glucose to the serum, also known as bulk flow, has not been well studied. The net flow of glucose in meningeal irritation is outward.

In summary, hypoglycorrachia is caused by bacterial, tuberculous, and fungal infections of the CNS. Some cases of viral meningitis have been noted. Low CSF glucose can be found in CNS sarcoidosis, carcinomatous meningitis, and subarachnoid hemorrhage (see figure 2).

Despite increased glucose consumption by leukocytes and bacteria, a defective glucose carrier system seems to be the primary derangement.

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Obstetrics and Gynecology

Emergencies in the Delivery Room, Part I

John V. Kelly, M.D.

Donald J. Ziehm, M.D., Editor

Emergency: an unforseen combination of circumstances that calls for immediate action; a distressing event or condition that can often be anticipated or prepared for but seldom exactly forseen (Webster).

In few disciplines of medical practice are life-threatening emergencies as possible as in obstetrics. Although rare, their appearance demands immediate and proper action. For not only is the mother's life in great danger, but also that of the fetus. While far from an exhaustive treatment of the subject, Dr. Kelly does give some "helpful hints" in the immediate care of the mother who is admitted with a threatening catastrophe.

Editor

Every physician who practices obstetrics has more than one harrowing experience in the Delivery Room to relate. Coupled with those recollections is the fear that sooner or later he or she will again be faced with a sudden Delivery Room emergency. The two events which probably trigger the greatest frequency of sphincter oscillations are acute postpartum hemorrhage and the trapped after-coming head. Along with those twin terrors are a number of other spasm-evoking episodes. This brief review is presented in the hope that it will have been even slightly helpful some lonely night at 2 a.m. when you wish you were anywhere but in that Delivery Room.

ANTE and INTRA-PARTUM HEMORRHAGE

Significant ante and intrapartum bleeding is nearly always due to separation of the placenta, either near or over the cervix, or higher up. The treatment is evacuation of the uterus by whichever route is quickest and safest, whether that be abdominal or vaginal. That judgement is not difficult; more challenging is determining the degree of blood loss if it is occult, and avoiding errors of omission. The following techniques may be very helpful:

(a) When the patient is admitted, mark the fundal height on the abdomen. Measure that height, record it, and check it every two hours or so.

(b) Even though the nurse tells you the patient's pulse and blood pressure are "O.K.", check them yourself, both in the supine and sitting position. Hypovolemia from occult bleeding or unknown amounts of blood loss at home will usually be quickly reflected by a postural drop in blood pressure, acceleration of the pulse, and the unsolicited comment from the patient that "I get dizzy when I sit up."

(c) To determine how much the patient is bleeding, simply placing a pad on the perineum and checking it periodically is insufficient. Separate the patient's knees in bed, separate the labia and then ask her to bear down (ala Valsalva). Often, out will come a large 400 - 500 cc clot which had been in the vagina, followed by a steady

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trickle of blood. Time for action!

The obvious moves include inserting an intracath, Ringer's Lactate (or Plasminate - not Dextran since it interferes with cross matching and has allergic potential) running wide open, blood to the lab for type and cross-matching and coagulation profile. A tube of blood for a bedside clotting time should also be obtained. Accurate urine output and early signs of oliguria and/or hematuria from DIC may be assured by having a Foley catheter in place. Fetal heart rate should be continuously monitored by a Doptone or external fetal monitor; fetuses don't wait long to reflect their own anxiety as they watch the placenta slowly peel away! Transfer the patient promptly to the Operating Room. The immediate availability of good obstetric anesthesia is critical. Conduction anesthesia (spinal or epidural) should be avoided. This is not the time for a blockage of sympathetic tone in the patient. A pediatrician, neonatologist, or other medical collegue who can skillfully resuscitate an asphyxiated newborn is of tremendous value.

Serial clotting times (every 2 hours) in a patient with an abruption are prudent, but usually the DIC manifests itself abruptly - bloody urine, bleeding gums, venipuncture oozing, oozing everywhere as the Cesarean Section incision is made. At this time the patient desparately needs platelets and clotting factors, for they have been used up via the abruption which released thromboplastin from the decidua/endomentrium into the circulation, thereby generating widespread clotting. The solution is not Fibrinogen (the federal government recalled all Fibrinogen from all hospitals in late 1977); whole blood, plasma or both are needed. Platelet transfusions are difficult to obtain but can be life saving. Cryoprecipitate may be available and is a source of fibrinogen.

Once the uterus is emptied there is no further source of the thromboplastin fuel to fire the DIC process. Evacuation is imperative!!!

Following an abruption the uterus is commonly boggy and contracts poorly. Oxytocin, ergotrate, prostaglandin given systemically or directly into the myometrium at the placental site may help. Also helpful is application of pressure with a lap pad or spleen roll over the placental site. Hypogastric artery ligation or hysterectomy, or both, may be required.

Blood loss can be dramatically reduced at the operating table by fist compression of the aorta against the vertebral column, just above the bifurcation.

In emergency circumstances as described above, it is imperative to have a CVP line in place so that one doesn't suddenly realize that the patient is overloaded when the anesthetist says "the patient seems to be wheezing, Doctor" or "does this patient have asthma, Doctor?" Incidentally, if the patient's situation is complicated by DIC, the CVP line should be placed in the antecubital or brachial vein rather than the subclavian; the former can at least be compressed if they ooze.

(To be continued)

Oncology

Mycosis Fungoides:

Current Status

Stephen E. Jones, M.D.

Editor:
David Alberts, M.D.

INTRODUCTION

I recently had the opportunity to attend a workshop at the National Cancer Institute (NCI) on cutaneous T-cell malignancies, particularly mycosis fungoides (MF) and the Sezary syndrome. The purpose of this workshop was to review the biology, pathology, staging, and therapy of these disorders and attempt to formulate some general guidelines which could be applied uniformly in future clinical trials. The following material represents my

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TABLE 1
MALIGNANT T-CELL DISORDERS

- Mycosis fungoides (MF) (probably a "helper T-cell" disorder)
- Sezary syndrome
- T-cell chronic lymphocytic leukemia (5% of cases of CLL)
- Lymphoblastic lymphoma, convoluted and non-convoluted forms
- Childhood acute lymphocytic leukemia (25% of cases)
- Sub-acute T-cell leukemia in Japan (probably a "supressor T-cell" disorder)
- Acute suppressor T-cell leukemia (one child studied at NCI)

summary of 21 separate presentations. Detailed manuscripts of the proceedings will eventually be published in a special issue of **Cancer Treatment Reports**. In addition, summary papers from individual smaller workshops on staging, pathology, and therapy will be forthcoming in that same issue and accordingly will not be summarized here. Many investigators were represented at this meeting and where appropriate I have mentioned their names and institutional affiliations.

GENERAL CONSIDERATIONS

A variety of lymphomas are now recognized as predominately of T-lymphocyte origin (Table 1). All of these disorders are rare and some have only recently been recognized. Many of these diseases affect the skin and some, such as MF, manifest a striking predilection for involvement of the epidermis as well as the dermis (the Japanese subacute T-cell leukemia, oddly enough, spares the epidermis but involves the dermis). The emphasis of this workshop was primarily on two cutaneous T-cell diseases: MF and the Sézary syndrome.

MF is a chronic disease characterized usually by a long pre-mycotic phase, which may last years prior to definitive clinical and pathologic diagnosis. Eventually, however, the skin lesions become clinically suspicious and skin biopsies are diagnostic of MF. The disease may progress through various stages, each with a more ominous prognosis: limited plaque, generalized plaque, tumorous, and finally visceral with involvement of lymph nodes and other organs. A variant of MF is the Sézary syndrome characterized by erythroderma and circulating atypical lymphocytes (Sézary cells).

Although the etiology of these disorders remains elusive, the epidemiologic profile presented by Dr. Mark Greene (National Cancer Institute) was of interest. Most patients with MF are males and the disease is predominately observed over the age of 50. Frequently, a history of allergy (often contact allergy), repeated skin infections, or sensitivity to sun exposure is revealed. There appears to be some general relationship to occupations with toxic chemical exposure as well.

PATHOLOGY

The pathology and dermatopathology of these disorders remains a challenge - hopefully more precise definitions will appear in the final summary paper on pathology. The hallmark of MF is the MF cell - a large, darkly staining cell with a convoluted nucleus (Figure 1). These cells can be found infiltrating the epidermis and dermis in typical cases and may occur singly or in clusters (some of the latter are known as Pautrier's abscesses). Early in the course, enlarged lymph nodes which are biopsied may reveal rather non-specific findings ("dermatopathic lymphadenitis"), but later MF cells can be demonstrated infiltrating lymph nodes, peripheral blood, and other organs. Electron microscopy (EM) is often of considerable help in establishing the diagnosis since the nuclear convolutions of these cells are more apparent with EM than with conventional light microscopy.

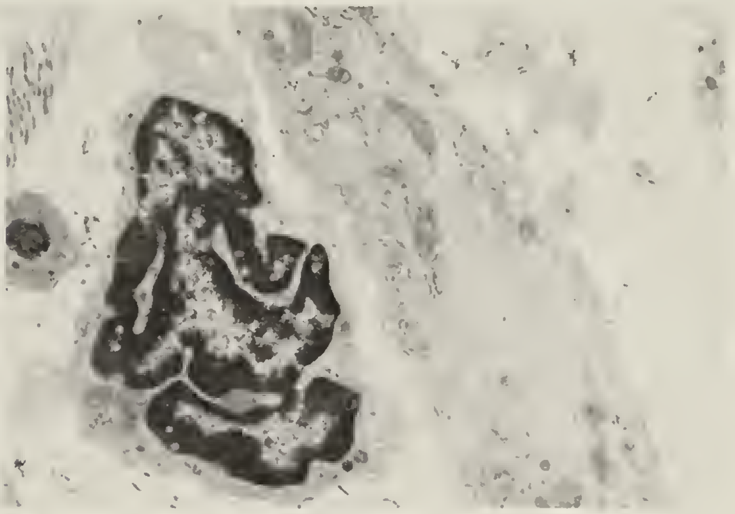

FIGURE 1
Electron micrograph of typical mycosis fungoides (MF) cell. Note deeply infolded nuclear convolutions ("cerebriform" appearance).

BIOLOGY

Data presented by Dr. Jacqueline Whang-Peng (National Cancer Institute) clearly revealed that MF and the Sézary syndrome are malignant disorders: the majority of patients she studied had severe chromosomal aneuploidy which was extensively present (both numerically and structurally). Although no common chromosomal marker was found, marker abnormalities for particular patients were present in all cells examined for that patient.

Dr. Samuel Broder (National Cancer Institute) reviewed their evidence that at least some (maybe one half) of cases of MF can be shown to be tumors of regulatory "helper T-cells (i.e., in lymphocyte co-culture experiments these cells facilitate or induce immunoglobulin production by normal B-lymphocytes). Some clinical evidence supportive of this concept was an old observation that many patients with MF have increased levels of IgA immunoglobulin (an immunoglobulin known to be T-cell dependent).

Although relatively little is known about cell kinetics in MF, investigators at the NCI under the leadership of Dr. Stanley Shackney presented some evidence that MF is characterized by high rates of cell production (the labelling index was 10% in 2 cases with peripheral blood involvement) and on the basis of kinetic compartment analysis postulated that the primary site of MF cell production may be the lymph nodes rather than skin.

Investigation on the biology of the T-cell lymphomas has been hampered by the difficulty in establishing long-term tissue culture T-cell lines. Dr. Adi Gazbar (NCI - VA Branch) reported that their laboratory has apparently established two long-term cell lines which should facilitate further work.

STAGING

In staging these patients prior to therapy, many of the techniques employed for other lymphomas have been applied (e.g., lymphangiography, bone marrow biopsy, liver-spleen scanning and even exploratory laparotomy with splenectomy). Dr. Ron Castellino (Stanford) presented their findings on 97 patients studied by lymphangiography (LAG). Only 28% had abnormal studies suspicious for lymphoma and only 5% had studies interpreted as diagnostic of lymphoma. Abnormal LAG's were more likely to be observed in patients with adenopathy; however, there was not a good correlation with the histologic diagnosis of MF in lymph nodes and the X-ray appearance. Overall, the LAG is much less helpful in MF than in other lymphomas and has only limited routine clinical value. Dr. Castellino also stated that liver-spleen scans were diagnostically worthless in staging patients with MF.

From this conference it emerged that one of the most useful tests for staging is careful examination of the peripheral blood for the presence of MF cells. These cells are difficult to recognize in patients with normal or low total lymphocyte counts and may be present at some times but not at others. Dr. Edgar Moran (Longbeach V.A.) presented evidence that the presence of MF cells is of considerable prognostic importance. For example, only 31% of patients without MF cells in their peripheral blood manifested evidence of progressive MF compared to 77% of patients with cells consistently observed in their blood smears.

Two other techniques for detecting these cells in the peripheral blood were discussed. Dr. John Guccion (VA Hospital, Washington) reported that examination of the peripheral blood buffy coat by EM was more sensitive than standard light microscopy. In 5 of 11 cases where the peripheral blood was considered to be "negative", MF cells were found by EM examination. Dr. Geraldine Schechter (same institution) reported that examination of rosetted cell preparations (which permits identification of T-cells) also facilitated the recognition of MF cells. For example, 42% of patients with either the plaque or tumor stage of MF had circulating atypical MF cells identified with her technique.

Thus, it is clear that MF is characterized by early hematogenous spread (although the bone marrow is usually normal) and that therapy planning with curative intent may well need to take this factor into account.

TREATMENT

Many forms of therapy have been employed for patients with MF. Most are able to control the signs and symptoms of the disease and some may even be curative.

Topical Agents

Since the vast majority of patients are first cared for by dermatologists, many types of topical (skin) therapy have been employed. Probably the most useful is nitrogen mustard applied to the skin in a dilute solution. Dr. Eugene Van Scott (Temple) who pioneered this technique reviewed its use. The mechanism of action of topical nitrogen mustard (HN_2) is poorly understood but probably involves some type of allergic or immunologic reaction rather than a specific anti-cancer effect (e.g., the reaction to HN_2 is usually less after electron beam radiotherapy which is lympholytic and immunosuppressive). Dr. Eric Vanderheid of Temple reported their 10-year experience with topical HN_2 therapy in 243 patients. The chance of inducing a complete remission (CR) with topical HN_2 was clearly related to the stage of disease and was as high as 80% for patients with limited plaque disease. Nonetheless, even patients with tumorous stages would occasionally clear all signs of disease with this treatment. Overall, 155 (64%) of 243 patients achieved a CR with topical HN_2 therapy and 32 patients have been followed longer than three years in continuous remission with maintenance therapy. Although others have stated that late relapses in MF are rare, the Temple group has observed five relapses to date in 16 patients when they discontinued maintenance HN_2 therapy. Nonetheless, their five-year survival estimates by stage of disease are quite respectable and similar to data presented by Stanford for electron beam therapy.

Dr. Van Scott also reviewed their extensive experience at Temple in using agents other than HN_2 for topical therapy. Although many are active (e.g., retinoids, nicotinic acid, phenolglycoic acid), the major problem with these other agents is poor patient tolerance when the drugs are applied to large areas of skin. In this regard, Dr. Carol Argyropoulos (Johns Hopkins) reported that tests of 23 anti-cancer drugs applied topically had demonstrated that several were quite active (e.g., cytosine arabinoside, galactitol, thio-TEPA). How useful these agents will prove to be remains to be determined.

PUVA (Psoralens with long-wave ultraviolet light)

This technique has now been applied to a variety of skin diseases including MF and psoriasis. Essentially, it is a form of radiation therapy with only minimal penetration of the epidermis. UV light-activated psoralens bind to DNA and can apparently kill MF cells. Dr. Barbara Gilchrest (Beth Israel Hospital, Boston) nicely summarized the effects of PUVA therapy which are often quite impressive in clearing the skin lesions of MF. For example, 7 of 11 patients achieved CR with PUVA therapy and side effects were minimal. Several other experts also reported similar beneficial effects from PUVA therapy in advanced MF.

Electron Beam (EB) Irradiation

This is the one therapeutic modality reported to date which may have curative potential. X-ray therapy has been known for many years to produce improvement in affected areas of skin. Irradiation with electrons (rather than photons) has been used since the early 1960's in order to eradicate all skin involvement by MF. Drs. Zvi Fuks and Richard Hoppe (Stanford) reported on their experience with electron beam radiotherapy. Techniques for administering a uniform total skin dose of electrons (electrons penetrate the epidermis and dermis primarily) are often technically complicated (e.g., a 6-field technique is used at Stanford).

In MF, a clear dose response curve has been established with the chance of achieving a CR being only 18% if total doses of 1000 rads or less are administered compared to a 93% rate of CR if the total dose is 3000-4000 rads. If the therapy is intended to be curative, high total doses to the entire skin must be given. Other radiotherapists at this meeting cited examples of recurrent MF in shielded areas (e.g., scalp, eyelids). The data from Stanford are impressive. CR rates were clearly related to stage of disease (96% for limited plaque vs. 72% for tumors), the total dose of irradiation, and possibly the use of topical nitrogen mustard as an adjuvant to EB treatment. Stanford has also shown that the presence of palpable nodes is an adverse factor and that survival is significantly better if an initial CR is achieved. Almost no relapses have occurred beyond the first 2-3 years after EB treatment and thus there is at least suggestive evidence that 25%-40% of patients may have been cured by EB therapy.

Systemic Chemotherapy

There are only a few reports on combination chemotherapy for advanced MF. Dr. Petre Grozea (Oklahoma) and I presented Southwest Oncology Group results of treatment of 24 patients with one of three combinations of agents (two with adriamycin and one without). The overall remission rate was 95% and 29% of patients achieved a CR. Remissions tended to last a median time of 6-12 months and the median survival of the entire group of patients was nearly two years. Since these patients had already undergone extensive prior therapy with other modalities before systemic chemotherapy, these results indicate that chemotherapy offers a reasonable approach to palliation. Unfortunately, from our studies there was no evidence that chemotherapy used late in the course was curative as it often is for other types of lymphomas.

Combined Modality Therapy

Since systemic chemotherapy is active in MF, since the disease appears to be systemic (e.g., circulating MF cells), and since EB therapy may be curative in a fraction of patients, a logical new approach to treatment would be combined therapy with EB plus systemic chemotherapy. Several studies of this type are underway but only Dr. Melvin Griem (University of Chicago) had some preliminary data on the efficacy of combined treatment. He reported recurrence rates of 55% in 21 patients treated by EB only compared to a recurrence rate of 33% for 9 patients treated by EB and combination chemotherapy.

At the University of Arizona, Dr. Peter Lynch, Dr. Robert Heusinkveld and I are participating in a Southwest Oncology Group study of adjuvant systemic chemotherapy after EB therapy. To date, of two patients we have treated in this fashion, one has relapsed and one remains continuously free of all disease one year after therapy. We are interested in seeing other patients with early MF for possible inclusion in this study. At the present time, this type of combined modality approach offers an excellent opportunity for improved "cure" rates for MF.

Pediatrics

Renal Transplantation in Children

The Phoenix Experience

Part II

Karen C. Cartwright, M.D.
Tracy L. Trotter, M.D.
Melvin L. Cohen, M.D.

Surgical Technique

As to the actual surgical placement of the graft, in older children, generally more than 20 kilograms, there is usually enough room in the pelvis for placement of the kidney in the anterior iliac fossa with anastamosis of the renal vein to the iliac vein and the renal artery to the iliac or hypogastric artery. This has been the placement used in all the children transplanted in Phoenix, except one who received an en bloc transplant of both kidneys from an 18 month donor into the iliac fossa. Although there have been no small children transplanted in Phoenix, there are two techniques used if the iliac fossa is too small to accept a large adult kidney. One is to place the graft retroperitoneally behind the cecum and anastamose the vessels to the distal aorta and vena cava. The other is used in the very small child where the kidney is placed intraperitoneally in a transverse position. In all cases, the ureter is implanted into the trigonal area of the bladder. In children with abnormal bladders, ileal conduits have been used with success.

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Immunosupression

While protocols for immunosuppression vary somewhat from center to center, the mainstays of all are corticosteroids, usually prednisone, and azathioprine (Imuran). They are generally started at the time of transplantation or sometimes a few days before the in live-related case. The steroids are then tapered as allowed by graft function over the ensuing months following transplantation. Azathioprine is continued at doses of usually 3 mg/kg/d, titrating it to keep the patient's white blood cell count in the 5,000/mm^3 range. The dose must also be reduced if oliguria is present to avoid toxicity. In addition, hepatic function is monitored for signs of azathioprine toxicity and the drug dosage decreased or discontinued if dysfunction is detected.

Another aspect of immunosuppression that has been tried in some centers is antilymphocyte globulin or ALG. This agent is prepared by injecting animals with lymphocyte preparations and then harvesting the sera. It was hoped that these preparations would provide additional immunosuppression and allow lower doses of steroids to be used. However, the clinical results have been fairly discouraging and there have been problems with uniform production as well as hypersensitivity reactions in the patients. Recently in Phoenix there has been experimental work with a newer agent known as antithymocyte globulin which is prepared by injecting rabbits with thymus tissue obtained during pediatric cardiac surgery. However, the safety and efficacy of this preparation is still being studied.

TABLE 5

Surgical Complications:

Urologic —	ureteral obstruction bladder leaks
Vascular —	renal artery thrombosis renal artery stenosis acute arterial dehiscence

Surgical Complications

The surgical complications of renal transplantation are actually relatively infrequent. They generally fall into the urologic or vascular categories. The most commonly encountered ones are shown in Table 5. Ureteral obstruction in the immediate post-operative period may occur with or without leakage of urine. The etiology is usually edema or necrosis of the distal ureter or twisting of the ureter during implantation. The symptoms may mimic rejection or be difficult to detect in patients with a post-operative acute tubular necrosis still in progress. Renal scans are helpful in making the differential diagnosis and surgical repair is necessary if the graft is to be saved. Bladder leaks occur especially in children with obstructive uropathies or otherwise abnormal bladders. These will often heal spontaneously as the steroids are tapered if adequate drainage is established.

Renal artery thrombosis may occur as part of rejection, torsion or kinking of the artery and perhaps from intimal damage in perfusion preserved kidneys. These grafts can rarely be saved and graft nephrectomy is the usual treatment. When renal artery stenosis develops it is usually associated with high-renin hypertension. Angiography is used to make the diagnosis but selective renin determinations should be utilized if the patient's native kidneys are present to confirm the actual source of the hypertension and significance of the angiographic data. Revascularization is a risky procedure but has been successful.

Acute arterial dehiscence is a rare but critical problem and occurs most usually if there is infection involved with the transplant in the early post-operative course. There has been only one surgical complication of note in Phoenix which was an arterial thrombosis distal to the graft which occurred in the immediate post-operative period and was successfully removed by thrombectomy.

Rejection

Rejection of renal transplants remains the major complication to be overcome. It has been divided into three main types. The first of these is hyperacute which appears within minutes to a few hours of transplantation and is associated with preformed antibodies in the recipient's serum. There is no effective treatment for this and the graft must be removed.

The second type is acute rejection which usually appears within the first six months and almost always after the first week postoperatively. The most common clinical signs are fever, tenderness and swelling of the graft, hypertension, decreased urine output, and rising creatinine. Making this diagnosis is important because many of the episodes will respond to appropriate treatment.

Acute rejection may be mild (or incipient) when there is only an elevation in the creatinine without the clinical signs. These episodes are usually easily reversed. Moderate rejection is seen when clinical signs are added to the biochemical picture. These reactions may require more vigorous therapy but again can most often be reversed. In severe acute rejection the oliguria may be so marked that dialysis is required while treatment is instituted. In this form even if the rejection is reversed there is usually some permanent impairment in the function of the graft.

The treatment of rejection was advanced with the institution of pulse therapy with IV methylprednisolone generally given in doses of 30 mg/kg up to one gram daily for several days. Formerly, increasing the oral prednisone was the only alternative and this was less effective and associated with more complications. With severe acute rejections these pulses may have to be repeated multiple times over the course of a few weeks to achieve maximal reversal. The only other therapeutic modality that has gained much use is local graft irradiation, which is usually given in doses of 150 rads every other day for 3 to 4 doses. While animal studies have shown reversal of the histologic picture of rejection, clinical trials have not been very impressive and some centers do not use it at all. Some of the Phoenix children have received irradiation in addition to their methylprednisolone for severe rejections, but impressive results have not been noted.

The differential diagnosis of acute rejection is not always easy and an accurate diagnosis is important for appropriate therapy. Symptoms such as fever may indicate infection or rejection. Hypertension is seen with steroid therapy and renal artery stenosis as well as rejection. Sudden oliguria can be a result of arterial occlusion, ureteral obstruction or severe rejection. Besides timing, constellation of symptoms and sometimes therapeutic responses, radionuclide studies are helpful in sorting out the correct diagnosis.

The third type of rejection is known as chronic rejection and generally appears after six months. It is heralded by a gradual deterioration in graft function often associated with hypertension. There is no therapy available and the process eventually results in loss of the graft.

Medical Complications

There are many other potential complications these patients face. Infection remains one of the leading causes of death and transplant recipients are particularly prone to infection with unusual organisms including a wide variety of fungi and viruses. Cytomegalovirus (CMV) can present in a variety of clinical ways. CMV pseumonia is often referred to as "transplant lung" and CMV liver involvement may be confused with azathioprine toxicity. There is also a fulminant CMV presentation that generally leads to death if immunosuppression is not stopped.

Any of the well known complications of steroids can and do occur in these patients. The cushingnoid features can be very distressing particularly to adolescent patients and in some centers has resulted in graft loss due to noncompliance. Posterior subcapsular cataracts develop frequently, in up to 60% of patients in some series, but fortunately they rarely seem to result in marked visual impairment. Aseptic necrosis, particularly of the femoral head, is very resistant to treatment and children are reported who have required hip replacement to improve their function. A rare patient has developed steroid diabetes but this generally disappears with tapering of the steroid dose. Hyperlipidemia occurs in a significant number of patients and carries with it the concern of premature development of cardiovascular disease. Besides lowering the dose, every other day protocols seem particularly helpful in minimizing this problem. The every other day protocols are still somewhat controversial as their safety in immunosuppression is not uniformly agreed upon. The centers that have tried every other day steriods have reported no increase in graft loss and in Phoenix there are several patients who are now on this protocol with stable graft function.

Hypertension is a common problem in transplant recipients with several etiologies. High dose steroids are most often the major factor in the early transplant period and resolves as the steroids are tapered. Acute and chronic rejections are often associated with hypertension and may become quite severe. Renal artery stenosis has been mentioned as a cause of hypertension that is potentially remedied with revascularization. There is also a form of hypertension that appears do novo, usually later in the post-transplant course, which does not seem to be associated with graft deterioration or any other specific etiology but generally responds to small doses of antihypertensives.

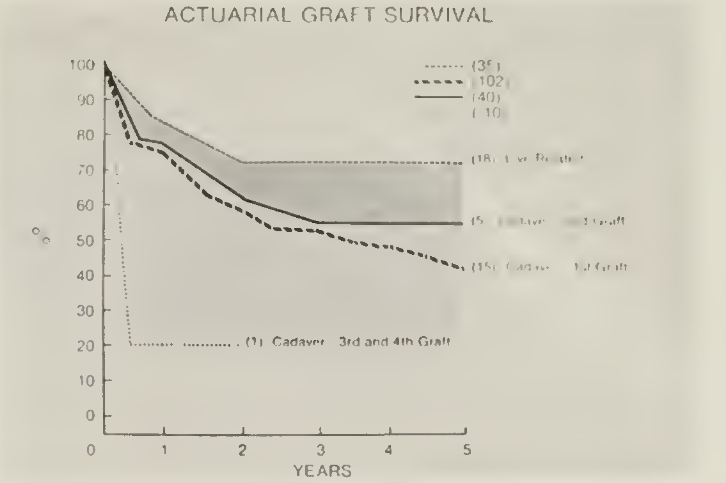

Figure 1

Survival

Despite all this, and much more, enough of these children are successfully treated to warrant the ordeal. Figure 1 shows the survival data of one of the large series done at the Children's Hospital of Los Angeles, and is representative of the results of most major series. The graph shows the actuarial survival of 35 live related, 102 cadaver first, 40 cadaver second, and 10 cadaver third and fourth grafts performed in 152 children. As can be seen the live related grafts do much better with 72% survival at two years and no subsequent attrition. The cadaver first grafts have a 70% one year survival declining to 40% by five years generally due to chronic rejection. Second grafts in children who have lost their first do very well and thus the repeat is definitely indicated. In this particular series, third and fourth grafts did poorly, but some centers have reported significant numbers of patients who finally accept a graft after multiple attempts.

Overall in this series, 103 out of 152 children or 67% are surviving with a functioning graft; 78 first, 23 second and 2 third. 22 patients or 14% have died and 27 patients are undergoing dialysis.

TABLE 6

PHOENIX EXPERIENCE:

Live Related 1st		10
rejected	5	
functioning	5	
Cadaver 1st		4
rejected	2	
functioning	2	
Cadaver 2nd		2
rejected	1	
functioning	1	
Live Related 2nd (functioning)		1

Table 6 shows the breakdown of the Phoenix patients. There have been 10 live related first grafts of which 5 are functioning up to 3 years; 4 cadaver first grafts with 2 functioning the longest now 5½ years out; 2 cadaver seconds of which 1 is functioning now for 2 years and 1 recently transplanted live related second which is functioning well.

Overall patient survival in Phoenix has been 80%. The three deaths (3/14) have all occurred in patients who had previously rejected a transplant and were on dialysis. One child died of sepsis, one of postoperative complications of a fistula revision, and one of metabolic derangements. There are 9 patients or 65% who have functioning grafts, all with creatinines of less than 2.0 and 2 children presently on chronic hemodialysis awaiting retransplantation.

Long Term Problems

It was hoped that transplantation would offer improvement in the growth of children with chronic renal failure who tend to be short for multiple reasons associated with the uremic state. Unfortunately, even successful transplantation has not been met with spectacular growth in every patient, although some have done well. The most important factor appears to be the growth potential at the time of transplantation. Patients with a bone age of greater than 12 years show almost no growth. The other important factors include the sex of the recipient (females doing worse than males for unknown reasons), how well the graft is functioning, and the amount of steroid the patient requires to suppress rejection. A dose of around 10 mg/m²/day seeming to be a critical level of prednisone.

TABLE 7

DISEASES KNOWN TO RECUR IN GRAFT:

- Membranoproliferative GN
- Rapidly progressive GN
- Focal glomerulosclerosis
- Goodpasture's syndrome
- Hemolytic-uremic syndrome
- Henoch-Schonlein purpura
- Cystinosis

Table 7 lists some of the diseases that are known to recur in the graft. Even with renal biopsy, it is sometimes difficult to determine whether the histologic picture is the original disease or chronic rejection. The membranoproliferative glomerulonephritides, particularly the dense deposit type, have a high rate of recurrence for reasons that are not well understood. Cystinosis presents an unusual situation. In this disease, cystine crystals are deposited in various organs, including the kidneys, resulting in the Fanconi syndrome and ESRD in middle childhood. Many of these patients have been successfully transplanted and it appears that while deposition of cystine does occur in the graft, the pattern is different from that seen in the native kidneys. The location of the crystals is mainly confined to the interstitium and does not involve the tubules as in the original disease, nor has the deposition been shown to adversely affect the graft function. Unfortunately, even with successful transplantation, the disease process in the other organs is not reversed.

It is now well recognized that successfully transplanted patients have a higher risk of tumor development. Five percent of transplanted recipients have been found to develop neoplasms which is 80 times the normal population's rate. These have been of many types, but in particular, the lymphomas occur at a 35 times normal rate and reticulum cell sarcomas at a rate 350 times usual.

Conclusion

It should be noted that in all the series rehabilitation of the successfully transplanted child has been excellent. In Phoenix, the children have been helped by the services of a social worker and group counselling sessions run by a professional who has worked with similar groups in other parts of the country. All nine of the patients in Phoenix with functioning grafts are currently participating the age-appropriate activities. Despite the morbidity and mortality and all of the hazards and risks of renal transplantation, it remains the best treatment for end stage renal disease, offering these children a chance to return to a reasonably normal existence. It is hoped that with newer work in histocompatibility and selective immunosuppression, as well as other potential developments, that renal transplantation can be made safer and more effective.

(For complete list of references write to M.L. Cohen, M.D., St. Joseph's Hospital and Medical Center, 350 West Thomas Road, Phoenix, AZ 85013)

Psychiatric Disorders

Key Concepts in the Diagnosis and Management of Depression for the Family Physician
Part I — Diagnoses

Thomas E. Bittker, M.D.

"He didn't seem particularly remarkable when he entered your office. You had known him for three years and he had always been a very conscientious worker and a compliant patient. Admittedly, he suffered a number of symptoms which tested your patience and you had intended to speak to him about his heavy reliance on analgesics for the treatment of headache. But, it had been a busy day.

He complained this time of stomach pain. He said he wasn't sleeping very well, and had begun to wonder about the possibility of his going through the "change of life" even though he was only 45 years old. You smelled alcohol on his breath, but when you questioned the patient, he stated that he had just come from a retirement party given for one of his friends. He seemed blue, but there were no tears. Impressed with the tension in his life, you tended to reassure the patient that his stomach pains were stress related and you cautiously prescribed a minor tranquilizer as you said good-bye.

The headlines in this morning's paper announced that your patient had died after his car had collided with a telephone pole."

The foregoing history is typical of the high risk, depressed, latently suicidal patient who very often seeks help from the family physician prior to engineering his or her own death. Recognition and treatment of the depressed patient is an important part of the skills of any family physician.

Approximately 15 percent of the adult population has been found to be so significantly depressed as to warrant psychiatric treatment. Research estimates suggest that from 30 to 40 percent of outpatient medical visits are related to mood disorders. Furthermore, most depressed patients will first consult the family physician rather than a mental health specialist for their symptoms. The family physician is accessible, trusted and a visit to him is not associated with the same stigma as a visit to a mental health counselor.

DIAGNOSIS

Depressed patients suffer from the SADS. Key to the diagnosis is *sleep disturbance*, typically either early morning awakening mixed with restless sleep or hypersomnia. *Appetite* changes including appetite for food, activity and sex are very common. *Dysfunction* in cognition and thought content are common. Patients will report an inability to concentrate or will complain of a loss of memory. They are often hopeless, helpless and feel worthless. These feelings may progress to preoccupations about suicide or death.

Finally, Somatic Dysfunctions often serve as the ticket of admission to see the family physician. These are multiple and include pain, fatigue, loss of energy, palpitations, sweaty palms, diaphoresis, dry mouth, bowel symptoms and menstrual irregularity. These symptoms rarely respond to conventional medical treatment.

Your index of suspicion for depression should increase whenever you see someone who manifests slowed or agitated behaviour of speech, persistent complaints which you cannot satisfy, or an inability to listen attentively to your comments. Many depressed patients will appear to be disengaged. You may respond to this by being rather bored yourself. Whenever you pick up these feelings in yourself, be particularly alert.

As your sensitivity to the possibility of depression increases, make a special effort to evidence interest and

From: Division of Health Maintenance Services, Arizona Health Plan, Inc., P.O. Box 5000, Phoenix, AZ 85010.

concern. Pay attention to your non-verbal behavior. Rather than leaning back with arms folded, a more appropriate posture would be to make certain that arms and legs are uncrossed and that the body lean is toward rather than away from the patient. Questions should be asked slowly giving the patient plenty of time to reply. Should you tap into a sensitive area, attempt to acknowledge to the patient your awareness of the depth of his or her feeling about the area. Many otherwise resistant patients can be reached when they become aware that they have been listened to by a compassionate physician.

All depressed patients should be questioned regarding suicidal intent. Often the expression of interest in this area proves a reassuring to the patient in the long run. It breaks down the barriers that the patient has constructed because of the taboo-nature of the subject. Suicide is most likely to occur in those patients who consider themselves worthless, who have exhausted all of their interpersonal resources or who have experienced a recent failure of importance to them. Risks are increased in the case of older patients, men, alcohol users, the divorced or widowed, those patients with family histories of suicide, the unemployed, and those patients with chronic medical problems, particularly those problems with a downhill course, e.g., emphysema, Huntington's Chorea and Parkinsonism. The following progression of questions is both tactful and relevant for the suicidal patient: Do you feel like giving up sometimes? Have you been thinking alot about death or dying? Have you thought of suicide? Do you have a plan for suicide?

Up to 40 percent of depressed patients will have a significant family history of either depression or mania. Mania will be manifested by histories of bankruptcy, poor social judgment or inappropriate elation. In addition, some depressed patients will have histories of alcoholism or drug addiction. Finally, depressed patients have a higher than expected rate of deaths of significant relatives prior to puberty.

As you proceed through the diagnostic evaluation of the depressed patient, survey his life for recent losses. Losses may be experienced in terms of major life goals such as those related to jobs, family expectations or long-held ambitions; bodily changes such as those associated with major illnesses, accidents and aging; and most typically, in relationships with significant other people such as recent deaths or separations.

Remember to consider those depressions occurring secondary to underlying medical problems. Although treatment of the medical problem will facilitate improvement in mood, most patients will require specific, focused treatment on the depression in addition to their medical therapy. Consider the endocrinopathies, tumors, heavy metal exposure, chronic infections, collagen diseases, post injury problems, anemias, nutritional deficiencies, medication side effects and alcoholism. Be particularly sensitive to the possibility that anti-hypertensive medications, minor tranquilizers and hypnotics, oral contraceptives, and some antibiotics may complicate or exacerbate depression. **(To be continued.)**

Radiology

Case of the Month

No. 36

Susan Brugman, M.D.
John C. Bjelland, M.D.

A 25-year-old $G_1P_1LC_0Ab_0$, A+ Mexican-American female with Class A diabetes mellitus gave birth to a 4,250 gram, 40 weeks gestational age male infant. Although the delivery was traumatically complicated by a right shoulder dystocia, the neonate had Apgars of 4 and 8 at one and five minutes, respectively. In the nursery, the infant was noted to be large-for-gestational-age, had a right Erb's palsy, and a heart murmur was present on auscultatation of the chest. The child breast fed poorly and was subsequently noted to regurgitate bile-stained fluid 12 hours post partum. The abdomen gradually became distended. No meconium passage was noted. The child was then placed NPO and an abdominal radiograph was obtained (see Figure I). Due to the findings of that study, a gastrografin enema was indicated (see Figure II).

What is the diagnosis?

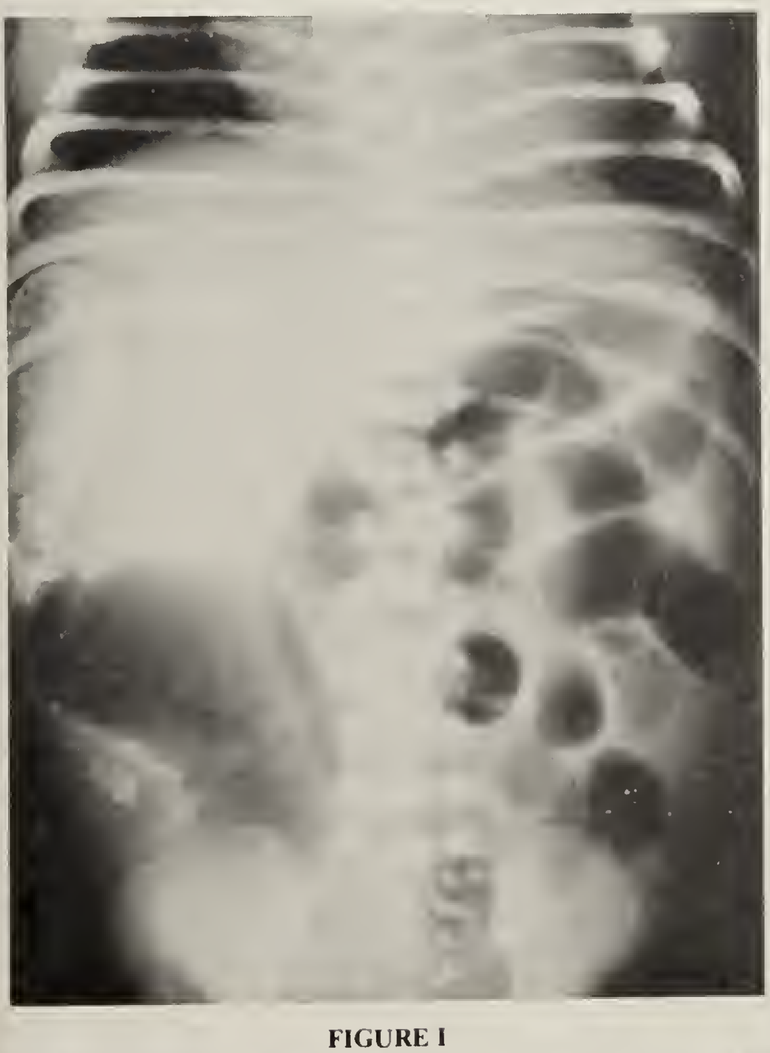

FIGURE I
Note the distended hollow viscera and unusual "balloon"-shaped density in the RUQ.

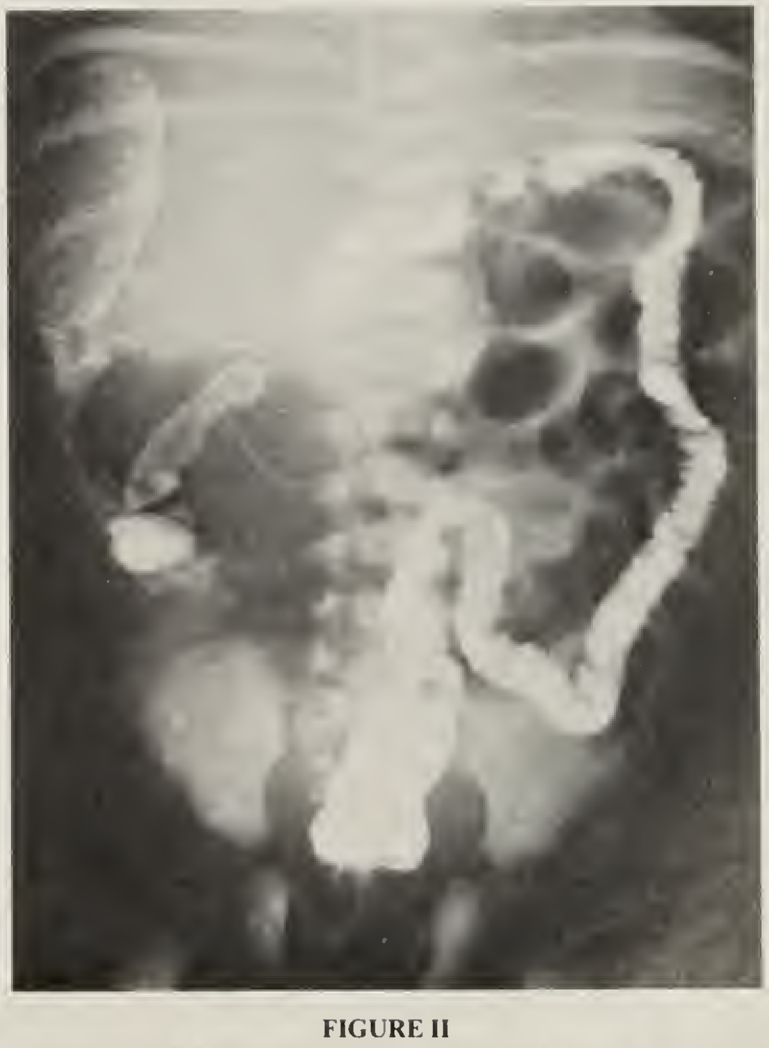

FIGURE II
Note micro-colon and inability to fill the terminal ileum in the normal retrograde fashion.

Meconium Peritonitis with Ileal Atresia

The stippled appearance of this calcified mass makes meconium peritonitis the most likely diagnosis and the barium enema confirms the underlying pathology by demonstrating the classic small colon seen with intestinal atresia. At surgery, this child was found to have distal ileal atresia, dense peritoneal adhesions, and a large, encapsulated calcified collection of meconium in the RUQ. The initial perforation had been sealed over.

The roentgenographic appearance of meconium peritonitis varies from diffuse intra-abdominal calcifications to localized collections in the abdomen or scrotum. The only entity with which it may be confused is calcified portal vein thrombi, particularly in the RUQ location. Other calcified abdominal masses include liver hemangiomas, hamartomas, metastatic neuroblastomas, adrenal calcification after hemorrhage, familial xanthomatosis and renal tumors, none of which bears close radiographic or clinical resemblence to this lesion.

Meconium peritonitis is an aseptic inflammatory process of the peritoneum which results in dense, calcified, fibrinous exudate, adhesions, and obliteration of the peritoneal space. It occurs as a result of prenatal bowel perforation and the escaped meconium can either diffuse widely or remain as a localized collection ("pseudocyst"). Advances in surgical technique and more aggressive and comprehensive therapy for neonates has decreased the mortality considerably but it still remains a life-threatening condition, particularly if the bowel perforation persists in extrauterine life.

The association of meconium peritonitis with meconium ileus (15% of children with cystic fibrosis have these presenting features) and with intestinal atresia (30%) is well founded. In the latter, a vascular accident of the mesentery is felt to be primary with subsequent small bowel infarction, fibrosis and atresia. As a result, the proximal segment of bowel becomes distended with fecal matter and its wall becomes devitalized and eventually perforates. In meconium ileus, a similar chain of events is set into action by the functional intestinal obstruction of the viscous waste. Of interest is that at least 50% of cases are idiopathic, may be asymptomatic, and retrospectively diagnosed when intestinal adhesions are discovered at laparotomy for another reason.

The clinical presentation is primarily that of bowel obstruction. The treatment is aimed at sealing the perforation, if still present, and correcting the underlying disorder. The long term prognosis is related to the primary pathology.

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Special Articles

Medicine in Modern China

F.A. Shallenberger, Jr., M.D.

China is an immense nation, being the second largest country in the world. China is composed of 27 provinces and three municipalities. The population is the largest of any nation in the world, exceeding 850 million people.

One out of every four living people in the world is Chinese. There are over 30 nationalities or minorities living in China, the vast majority of whom are of the Han nationality and it is their language that is spoken throughout the country. Dialects are spoken as well but all Chinese can understand and speak the Han dialect. China's written history goes back over five thousand years.

Prior to 1949 and the overthrow of the government of Chiang Kai-Shek medical care in China was mainly limited to the urban areas. Here there were hospitals and physicians trained in Western medicine. Once outside of the urban areas medical care was limited to the very few who could afford to pay. Medicines were expensive and difficult to come by. Medical care in the rural areas was rendered for the most part by a few poorly trained charlatans and witch doctors. It was the common lot of a sick peasant to trust to Providence as to whether he recovered from his illness or not. The state of longevity was very limited and until recently a man who reached the age of 57 was considered to have reached a ripe old age. Liberated China's medical problem therefore was an immense one. It was necessary to provide some type of basic medical care to the vast majority of people who lived in the rural areas and were previously without medical care of any kind. It was also necessary to upgrade the medical care available in the urban areas and to carry Western medicine and its techniques into the countryside providing basic medical and surgical care within easy reach and at reasonable cost to every segment of its population. The task was enormous and could not have been carried out except for the excellent central direction of Chairman Mao Tse-Tung. On June the 26th of 1965 Chairman Mao issued a directive saying "In medical and health work, put the stress on the rural areas." Prior to this directive medical care had been advancing in a Western style in the urban areas with the development of new hospitals and the establishment of new medical schools. Shortly after this directive the People's Cultural Revolution occurred in 1966 bringing about great changes in medical education.

Before one can discuss medical changes one must understand what had been going on in the urban and rural areas of the country. Under the communists in 1949 all means of production became centralized in the urban areas. Chairman Mao issued a directive that agriculture would be the economic base of the country with light industry its most pressing need and heavy industry to be encouraged. Accordingly in the urban areas all private property was taken over by the State and people were provided with shelter and jobs were available to all. Salary was similar for all segments of the population, ranging from about 45 yuan for a low paying job up to 100 to 300 yuan per month for a physician or a university professor. The exploitation of local mineral supplies and local energy supplies was encouraged and the production of the needs of each community was accomplished. Communities which were consumer communities found themselves producing their own coal, toothpaste, paper products, etc. Light industry came into being initially with the production of water pumps for irrigation and hydroelectric plants for the production of electricity. In the countryside things moved along in a somewhat different direction and it is for this reason that China does not call herself at this time a communist country but rather considers herself a socialist country. Individual farmers after Post-Revolutionary land redistribution combined in groups of three or four to form Mutual Aid Societies. These Mutual Aid Societies then combined in numbers until eventually they formed vast groups of farmers called Communes. The labor in Communes is divided into Brigades and the Brigades are divided into Teams.

On Wednesday, June the 21st 1978, we took a trip to a Commune called Chaing Chiao. This was an agriculture Commune. It was founded in 1958 and covered 1,241 Hectares (metric acres). There were 16,000 people living in this Commune of whom 11,000 were workers. There were 11 Brigades and 105 Teams. Their main products were grain, vegetables and livestock. Some small manufacturing was also done. They are producing 17,000 kilograms of vegetables per Hectare, raising 23,000 pigs, 67,000 chickens and have 24 large tractors, 125 small tractors, 13 automobiles, 22 cattle trucks and 23 electric pumping stations. This particular Commune has 14 schools with 3,716 children in school. Medical care is provided for them on three levels. The first consists of the "Barefoot Doctor", the second of the Brigade Physician Out-Patient Clinic, and the third of the Commune Hospital. We found in traveling throughout China that this commune well exemplified all of those which we saw. Each commune is different in the same manner that each individual is different. Some communes finance themselves in slightly different manner from others, but in each commune each member contributes a small amount of yuan annually to assure himself full out-patient and hospital care. In some of the communes medical care is provided without any additional outlay by the patient, in other communes medical care is provided free but drugs are partially or fully paid for by the patient. In some, hospital care at any level is free, and in others partially or totally at the expense of the commune member. There is no uniformity in communes in regard to the defrayment of the costs of medical care, although all are encouraged to provide the maximum care that commune members desire for themselves. They are completely autonomous in this regard, having directives from the Central Committee, but no requirement to follow them.

All Medical Colleges in China are autonomous and are not connected to any University of any kind. They run anywhere from one to four or five hospitals, some of which are general and some highly specialized. In their curriculum they teach Western Medicine, Chinese Herbal Medicine, and Acupuncture. Secondary to this level of medical care is the City Hospital. Following the City Hospital comes the County Hospital and then, under the County Hospital, the Commune Hospital. The Commune Hospital is capable of providing many major services and can carry out such operations as gallbladder removals, hernia repairs, hip replacements, deliver babies, do routine laboratory studies, X-rays, etc.

On the Brigade level there is an outpatient department run by "Barefoot Doctors". "Barefoot Doctors" work in the fields beside their fellow workers and provide medical care during their noontime break and also in the evening after hours. The "Barefoot Doctors" usually work in teams; one "Barefoot Doctor" being a field worker, while the other visits

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in homes and on the job.

Prior to the Cultural Revolution of 1966, at which time a devastating blow was dealt to all of the educational institutions of China, Medical School was entered by students completing Middle School, the equivalent of our High School. The course was an 11-month a year course for five years. Following the Cultural Revolution, the means of admission to Medical College was changed. A student no longer had to graduate from Middle School but became eligible for an entrance examination by passing an equivalency test. The school term was three years. China has recently discovered that while this produces a vast number of physicians, it does not meet the quality needs of either the rural or the urban areas. This year they have gone back to the five-year course and are requiring their students to be Middle School graduates. In addition the number of students has been markedly reduced. At the Tsong Shan Medical College of Canton the present number of students is being reduced to 200 per class from the previous 500. There are also 34 foreign students from 13 countries, mainly African. Two hundred students are enrolled in different specialties at this time. Aside from the usual Western-style medical education, these students receive intensive training in the use of herbal medicines and acupuncture. After one has an opportunity to visit an out-patient clinic where thousands of patients are seen every day, one realizes that some necessary means of providing medical care for a reasonable cost had to be devised. In most rural areas the peasants themselves either raise their own herbs in special plots or go into the countryside and pick herbs which they then bring to the "Barefoot Doctor" for processing. This makes medications very inexpensive. In addition acupuncture is used very extensively to treat minor complaints. It is a simple thing to do. There are full-body charts with acupuncture points demonstrated for every complaint and diagnosis. Appropriate charts are consulted and sterile needles are inserted at specific points. These are often accompanied by electrical stimulation. At other times Moxibustion, the burning of an incense-like material which is held close to acupuncture needles, is used to warm these needles. The aroma is penetrating and some heat is generated in the needles themselves. Because of "Barefoot Doctors" China has been able to meet the needs of its rural people.

"Barefoot Doctors" are not unique in China. Such practitioners exist in every culture in the world. They are similar to Medical Corpsmen or Physicians' Assistants, as we call them today. They are not as highly trained or educated as Nurse Practitioners. They are selected by the peasants from those young men and women in their community who, regardless of their education, have demonstrated a distinct and deep commitment to the people and to the Communist Party. After demonstrating the ability to complete their studies they are then sent off to Medical School where they receive training in both Western and Chinese Medicine. They are encouraged to use Chinese Medicine, especially acupuncture and Herbal Medicine, because of the low cost. However, they are also trained in the use of Penicillin, Streptomycin and Chloranphenicol, etc., with instructions in both prevention of disease as well as in therapy for basic conditions. They are instructed to recognize serious illness and to dispatch these patients to advanced care as quickly as possible. The urban areas receive their basic medical care at clinics set up in various portions of the city. These clinics range in the variety of services rendered from Chinese-style Medicine to Western-style medicine. The patient who enters the clinic is given a choice of the type of medical care which he wishes to receive. He may select a Pulse Clinic where practitioners, after hearing complaints, evaluate the blood pressure, the pulse and issue prescriptions in classic Chinese style for herbal remedies. Patients might also choose acupuncture therapy or traditional Chinese Medical Clinics where medical care is mixed with Western medical examinations. In the clinics an attempt is made to select those patients for whom Western-style care is indicated and to direct them there. Otherwise they are treated in the manner chosen by the patient. Since China's population is so gigantic and medical care is such an enormous logistical problem, the solution seems to work very well for the Chinese. The vast majority of Chinese are uneducated peasants steeped in traditional Chinese medical care. When Western medicine is needed it is available with all of its facilities even in remote areas.

For an American physician visiting both rural and urban out-patient clinics one is everywhere impressed by the spartan facilities available, the lack of maintenance, the dinginess of hallways and rooms, the lack of paint, and the tremendous number of people to be served. In the Commune Hospital, as in the large City Hospital, many beds are crowded into small rooms. Patients wear their own clothing and sleep upon straw mats placed on the mattresses. Operating and delivery rooms are primitive by American standards with operating room tables in the Commune Hospital level reminiscent of American models from the 1890's. Western-style medical instruments are available but their number is limited.

In America, in order to control the transmission of Hepatitis and other diseases by medical equipment used in the care of patients, all syringes, needles, intravenous tubing and solution containers are disposable. This is not so in any medical facility we visited. There, as in the United States prior to the 1940's, intravenous containers, tubing, needles, syringes, etc., are used over and over again. They are sterilized and prepared in the hospital where used. Intravenous solutions are prepared by each institution for their own needs.

Perhaps the most dramatic observation to be made by an American physician visiting in China is the witnessing of operations performed under Acupuncture Anesthesia. We were privileged to witness two operations for the removal of solitary nodules in the thyroid gland, a tubal ligation and the removal of a large stone from the right ureter. These four operations were done under Acupuncture Anesthesia. All of these patients received a preoperative sedation with Luminal. Then, approximately 30 minutes prior to the start of the operative procedure, Acupuncture needles were inserted at the prescribed points and attached to an electrical pulsating instrument. Immediately prior to the start of surgery, 50 mg. of Dolantin, a Chinese opiate, was administered intravenously by the surgeon. The operation was then begun. One of the thyroidectomy patients remained quiet with his eyes closed during the procedure but another patient had her eyes constantly darting about the operating room, looking directly into the eyes of those intent American visitors watching her procedure. Even more dramatic was to watch the patients at the conclusion of the operation sit up on the side of the table, wave to all of us, and then proceed to walk down the hall to their room. The patient with the very large ureteral calculus returned to her room by stretcher, but she did wave and give a toothless grin to all of us who were watching her from the Amphitheater. She was obviously awake and in no distress as she left the operating room. Our Chinese colleagues informed us that it is seldom necessary to use more than aspirin and an occasional barbiturate for pain relief following surgery under Acupuncture Anesthesia. Not everyone is eligible for Acupuncture Anesthesia, nor can every operation be carried out in this mode. Children are not accepted and adults are carefully screened by both surgeon and anesthetist. In addition this anesthesia is not used where muscle relaxation is required. It is best suitable for operations above the collarbone and on the extremeties and least acceptable for abdominal surgery.

Chinese surgical skill was perhaps best demonstrated at Mei Shan. This is a commune built around a steel plant. The hospital is a careworn and tired building, but the surgery was excellent. We examined a patient who had had third degree burns over 94 percent of her body one year previously. In addition to the surgical care of her burns she had artificial prostheses placed in one elbow joint, one hip joint and one knee. We also saw patients post-operatively who had had total hip replacements and knee replacements using Chinese fabricated prostheses. These patients were able to squat fully and walk with a normal gait. On one patient who had a non-union of her tibia, we saw pre-operative and post-operative X-rays of bone grafts done in association with arterial grafting. In addition to this we examined a man who had had his right forearm completely severed about the mid portion. The patient and the severed limb were brought to the Mei Shan Hospital where surgery was performed and the appendages were joined. This was a very remarkable surgical feat and we were able to examine this patient and discovered that he had good motion in his right hand and a good grip. There was some angulation deformity of the right forearm but otherwise the results were outstanding.

Chinese Medicine is a strange blend of ancient and modern medical techniques. The patient has a strong role in determining the type of medical care he is to receive. This choice, of course, is also present for American citizens in that they may choose Naturopathic care, Chiropractic care, Osteopathic care or traditional Allopathic Medical Doctors. Unlike the United States, where the various disciplines practicing medicine are not joined together in one system, in China all of the various practitioners, ranging from "Barefoot Doctors" pacticing Acupuncture, cupping, pulse medicine, herbal medicine and Western-style medicine, up to the highly skilled physicians and surgeons in the medical colleges, are integrated into one vast medical unit. Patient review is undertaken at all levels from the first occasion the patient is admitted into the medical system. Any time it is felt that traditional therapy is failing to meet the needs of individuals, they are advanced up the ladder of medical care.

Chinese Medicine seems to meet the needs of most of its citizens. Facilities available for the administration of care are primitive and unkempt. A great deal of the care is rendered by "Barefoot Doctors" who are comparable to Physicians' Assistants or Medical Corpsmen, here in the United States. There are Western-trained physicians and Western-type facilities in almost every area. These facilities by no means meet our standards but adequately meet the needs of the Chinese people. Western-trained physicians are encouraged to use Herbal Medicine and Acupuncture because of the inexpensiveness of this type of treatment. The Chinese have great faith in both Herbal Medicine and Acupuncture. The vast majority of them select this type of medicine for their medical care unless Western Medicine has been recommended to them because of the seriousness of their illness. Modern China must be given great credit for its successful efforts in revamping the medical care of this vast nation in such a short period of time and in such a successful manner.

Correspondence

Editor
Arizona Medicine

Dear Dr. Block:

As an Associate Member, retired, dues exempt, the editorial in the July *Arizona Medicine* was interesting, I read it in the library.

Yes, there is a buyers market for the physician seeking continuing education programs. But no mention was made of cost. For the active practitioner this may or may not be a small problem depending on how long he has been in practice.

For the retired physician $50-$100 and up is a real problem. We recognize that BOMEX offers us a retired category in which we need not meet continuing education requirements. Regardless of our retired status there are many of us that desire, (even though we practice no more) to keep current with our life long profession. Hospital committee meetings and grand rounds and friendly luncheon meetings of our specialty club do not do thus. If they did there would be no reason for recognized continuing medical education sessions sponsored by the University of Arizona and many hospitals and specialty societies.

ArMA has recognized this group who desire to remain current by a more reasonable fee for its annual meeting.

Possibly it is time every approved continuing education program have a reduced fee for retired physicians who have retired as far as financial return is concerned, but who would be proud to continue their education and be able to visit their old hospital and talk to the intern and resident staff on an up-to-date basis. Or even to attend rounds and conference and feel confident to participate as an old-timer who has kept abreast.

Yes, for those of us proud of our M.D. degree, we would like to with a less financial burden be able to qualify for our Certificate of Continuing Medical Education — even though it means nothing except that *we are proud of our profession.*

Sincerely,
Louis C. Kossuth, M.D., M.P.H.

Editor
Arizona Medicine

Dear Sir:

The Association's "Report on Health Care Cost Containment" was well written.

We missed a great opportunity in not stressing the impace of the malpractice situation on medical costs.

The inconsistency is there for all to see of public insistence upon the finest and most modern of medical care with a warranty of safety and effectiveness on the one hand, while decrying the cost on the other.

As far as "planning" is concerned, the process has added about a million dollars to the cost of the new Good Samaritan Hospital, and like the barnacles on the hull of a ship, has slowed progress while adding to the cost.

While we are in agreement that like "Caesar's wife," physicians should be beyond reproach, the actual increase in cost of medical care as a result of physicians' ownership of labs, pharmacies, and the like is microcosmic.

Sincerely,
Paul B. Jarrett, M.D.
Department of Pathology
Good Samaritan Hospital

Editor
Arizona Medicine

Dear Dr. Block:

Dr. Thomas Brown's recent correspondence[1] is of interest because it exemplifies an area of considerable controversy and confusion among Latin American physicians. It is of particular interest in Mexico, where dipyrone became the leading selling drug in 1977. (This information as well as our table of the most commonly sold drugs in 1974 is from an IMSS press release made each spring. We suggest that Dr. Brown or any *Arizona Medicine* reader wishing more complete references please write to the IMSS or to us directly.)

Dr. Brown is correct in his impression that we are very concerned with the illegal purchase of pharmaceuticals without a physician's order in Mexico. While he holds that dipyrone is widely prescribed by physicians, recent studies show that an alarming number of controlled drugs are obtained without a prescription — varying from 44 percent to 62 percent among urban higher and lower socioeconomic classes.[2] We suspect that this problem is much more frequent in rural areas.

While Dr. Brown states that he cannot find one case of dipyrone-induced agranulocytosis in the literature of Central and South America, we have found case reports in Mexico,[3] Chile,[4] Argentina[5] and Brasil.[6] Dipyrone-induced agranulocytosis has also been reported from a border clinic in Mexico treating North Americans for rheumatic disorders.[7]

The argument that the Latin population is genetically protected against some idiosyncratic drug reactions has been promulgated before — most notably in the case of chloramphenicol and aplastic anemias,[8] but has been refuted by tragic epidemics In the case of Columbia, for example, blood dyscrasias became shamefully common with the introduction of generic chloramphenicol.[9] The lower incidence seen today has been ascribed to an "iatrogenic genetic selection" and its effect on later generations.

In the case of dipyrone-induced agranulocytosis among the populations of Central and South America, several factors prevent an accurate estimate of incidence. Failure by physicians to recognize that this phenomenon *does* exist in these populations precludes proper blood monitoring. The availability and purchase of this drug without a physician's prescription as a free market item further removes the patient from the informed medical provider into the arena of sales promotion. Lastly, the high incidence of deaths due to infectious processes, as well as a large number of deaths not medically certified, probably masks a true appraisal of the effect of dipyrone upon mortality figures.

We respect Dr. Brown's opinion — but we believe that the evidence does not justify the phenomenal sales and prescriptions of dipyrone in Mexico and South America. It would gladden us to be proved wrong, for we believe that human lives are being sacrificed for avarice and expediency.

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Indications for Fiberoptic Bronchoscopy

Joseph K. Bush, M.D.

The technique of fiberoptic bronchoscopy, introduced ten years ago, has proven to be one of the major advances of the decade in evaluation of the patient with pulmonary disease. It's usefulness and accuracy have continued to increase as new instrumentation has been added. The flexible bronchoscope, in addition to minimizing the patient's discomfort, provides a much greater access to the tracheobronchial tree than the rigid bronchoscope. All 4th order bronchi can be visualized, as can be 86 percent of 5th order, and 56 percent of the 6th order bronchi.[1]

Although serious complications can occur, they are unusual. Credle[2] in a review of 25,000 procedures, found significant complications to be less than 0.1 percent. Minor problems are more common, such as hypoxemia in patients with borderline hypoxemia-since a drop in pO_2 of 15-20 mm. Hg. may occur. Arrhythmias seem to be related to the hypoxemia and so can be prevented by supplemental oxygen. With biopsy procedures, pneumothorax and hemorrhage are more often seen but generally have not proven a serious problem.

SUSPICION OF BRONCHOGENIC CARCINOMA is obviously one of the common applications of the flexible bronchoscope. Results have been good whatever the basis of suspicion: an abnormal chest x-ray, or for example, hemoptysis with or without an abnormal x-ray. The best yield is from those patients with tumors visible by bronchoscopy; diagnostic rates of around 90 percent have been achieved.[1,3] Both the use of brushing and biopsy seem important in achieving this yield.

Peripheral tumors, beyond the range of visualization, may be accessible by use of fluoroscopy. Again both brushing and transbronchial biopsy should be carried out as there is much overlap in the results. By so doing, diagnosis has been made in 71 percent or more.[3,4] In the series of Kvale et al, that combination in fact obviated the need for the customary bronchial washing and the post bronchoscopy sputum samples, which added little and which did not seem to be economically justified.

Biopsy has also been useful in diagnosing metastatic lung tumor (presenting as a problem of differential

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From: 1515 N. Ninth St., Phoenix, AZ 85006.

diagnosis), with a success rate as high as 50 percent.[4] Metastatic lesions with lymphangitic involvement, mediastinal tumors, and lymphoma involving the lung have been among other positive findings.

HEMOPTYSIS is another common indication for bronchoscopy. At present massive life threatening bleeding warrants use of the rigid scope. But most bleeding is more slow and the use of the flexible fiberoptic bronchoscope is demanded by virtue of its broad visualization of subsegmental airways. The bleeding site was identified by Smiddy, et al, in 66 of 71 patients.[5] Bronchitis was the most common cause of bleeding, followed by bronchogenic carcinoma.

PARENCHYMAL LUNG DISEASE has become a possible indication, when, for example, a persistent unexplained infiltrate exists, or diffuse parenchymal disease is present. Clearly, most pneumonia does not warrant such a study nor does diffuse nonprogressive disease where there is little likelihood of the necessity of some therapeutic intervention. Some entities which have been diagnosed through the use of brushing and transbronchial biopsy include sarcoidosis, desquamative interstitial pneumonitis, alveolar proteinosis, and lymphangitic carcinomatosis; infections such as tuberculosis, fungal, and opportunistic infections including pneumocystis carinii and cytomegalo-virus. With these latter, the procedure has the advantage that it can be used even in gravely ill persons.

THERAPEUTIC USES of the fiberoptic bronchoscope are limited. The most clearly beneficial use has been in the circumstance of atelectasis due to retained secretions, in the critically ill patient in respiratory failure.[6,1] By use of a special attachment, it can be carried out through an artificial airway and without interrupting ventilatory assistance. Again it is a clear clinical observation that most atelectasis is an indication for a program of bronchial toilet and not for bronchoscopy. It is the patient who is immediately or eventually unable to clear retained secretions or blood who requires this type of direct help.

Saleeby et al[7] report several cases of lung abscess resistant to usual therapy, draining as a result of bronchoscopy with washings and brushings.

There has been experimental work suggesting that in the future, foreign body aspiration may be amenable to the fiberoptic scope. But at this time that remains still in the province of the rigid bronchoscope. Advances in instrumentation may alter that in the future.

SUMMARY: Fiberoptic bronchoscopy is of proven value in the diagnosis of problems in pulmonary medicine. Suspicion of bronchogenic carcinoma and hemoptysis remain as the most common and useful indications. Persistent infiltrates and diffuse lung disease, when they become diagnostic problems, may often be diagnosed through microbiological, cytological, and histological recovery by means of the flexible bronchoscope. Atelectasis due to retained secretions in the critically ill patient may respond to suction and washing. Other therapeutic uses await further proof of feasibility.

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Indications for Bronchoscopy

Robert J. Clark, M.D.

The bronchoscopic era began in the late 19th century with an introduction by Killian. In the early 20th century, bronchoscopy with a rigid tube was a commonplace procedure, mainly geared to the removal of foreign bodies. In the late 1920's and 30's, a resurgence of interest occurred with many other indications becoming evident. Lately, with a marked increase in the incidence of lung cancer and opportunistic pulmonary infections, the bronchoscope has found varied applications.[1] With the advent of the flexible fiberoptic bronchoscope, the procedure became more widely accepted and performed by internists as well as surgeons. Fiberoptic bronchoscopy is a relatively safe procedure, well-accepted by patients, and easily performed.

There are many indications for fiberoptic bronchoscopic examination. They can be generally categorized into three groups; diagnostic, therapeutic and preoperative evaluation.[2]

DIAGNOSTIC

ABNORMAL CHEST X-RAY

One of the more common indications for fiberoptic bronchoscopy is that of an abnormal chest x-ray finding in which the diagnosis is obscure or neoplasm is suspected. One must, of course, rule out uncomplicated pneumonia, but in the remainder of instances where an abnormal chest x-ray is present, bronchoscopic evaluation can be very helpful. The value of bronchoscopy is much less the more peripheral the lesion and other techniques, described below, are necessary. The more proximal the lesion, the more likely a diagnosis will be made. During the procedure, visual examination with biopsy of

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suspicious areas is done and brushings of affected subsegments and washings for cytologic analysis are performed. The washings and brushings can be cultured for fungi, tuberculosis, viruses, routine aerobic bacteria and mycoplasma. Washings are examined cytologically for tumor cells. The newer brushes contained in separate catheters will enable one to obtain specimens for anaerobic cultures through the bronchoscope.

DIFFUSE PULMONARY DISEASE

The evaluation of diffuse pulmonary disease is greatly facilitated by bronchoscopy in conjunction with the performance of a transbronchial lung biopsy.[3,4] In the majority of cases, adequate lung tissue can be obtained to make a diagnosis, thereby avoiding an open thoracotomy. Diseases such as the various interstitial pneumonitides, sarcoidosis, drug induced pulmonary disease, lymphangitic carconoma and other syndromes can be diagnosed. The procedure is occasionally accompanied by bleeding and pneumothorax, necessitating preoperative platelet counts and clotting function tests.

PERIPHERAL PULMONARY NODULES

The flexible fiberoptic bronchoscope is of relatively little use alone in the evaluation of peripheral nodules, but, if coupled with selective bronchial catheterization under fluoroscopic control with a steerable catheter, the yield for diagnosis of carcinoma approaches 85%. This is an extremely useful technique with a very low morbidity and can help avoid open thoracotomy in many instances. The dilemma of a negative or nondiagnostic result is ever present and warrants individual, serious consideration. Not everyone in Arizona with a pulmonary nodule needs an immediate thoracotomy.

ATELECTASIS

Bronchoscopic examination is an integral part of an evaluation of atelectasis. Endobronchial lesions, aspiration, mucous plugging, and obstruction by neoplasm may be a few of the problems requiring special treatment. The procedure, if performed because of retained secretions or foreign body aspiration, is often therapeutic.

LOCALIZED WHEEZING

Localized wheezing may be present with partial endobronchial obstruction. The obstruction could be an adenoma, broncholith, foreign body, or malignancy. These areas are usually readily accessable to the flexible bronchoscope.

HEMOPTYSIS

Hemoptysis is an indication for bronchoscopic examination and is best performed when active bleeding is taking place. In this way, the subsegment at fault, if any, can be identified accurately for immediate and future reference. Bronchiectasis and chronic bronchitis can be causes of hemoptysis but are frequently diagnoses of exclusion unless bronchography is performed simultaneously. Carcinoma must always be suspected. Other cause of hemoptysis include pulmonary abscess, pulmonary infarction, pneumonia, and systemic diseases such as Goodpastures syndrome.

UNEXPLAINED COUGH

Persistent cough after usual diagnostic measures and treatment have failed should be evaluated by bronchoscopic examination. Endobronchial lesions should be sought and if present should be biopsied. They can be benign or malignant, but are usually of the latter variety.

UNRESOLVED PNEUMONIA

Slowly resolving or non-resolving pneumonia frequently heralds the presence of an obstructive lesion. These lesions are benign or malignant and can represent foreign bodies, mucous plugging, adenomas, and carcinoma. Selective cultures and washings might also be obtained with a much better yield than expectorated sputum.

SELECTIVE BRONCHOGRAPHY

Where localized bronchiectasis or obstruction is suspected, selective bronchography can be easily performed through the bronchoscope. This procedure can distinguish between surgical and nonsurgical candidates and is well tolerated.

POSITIVE SPUTUM CYTOLOGY

The finding of a positive sputum cytology is an absolute indication for bronchoscopy to locate and biopsy the lesion if it can be visualized. If a peripheral lesion is seen on the roentgenogram, the combination of bronchoscopy and selective bronchial cathertization under fluoroscopic control can be invaluable.

METASTATIC CARCINOMA FROM AN UNKNOWN PRIMARY SOURCE

This unfortunate circumstance is far too common where one has no obvious clues to the location of a primary cancer. Non-invasive procedures can and should precede bronchoscopy but if all are negative, a bronchoscopy can occasionally provide the answer, even in the face of a normal or nondiagnostic roentgenogram.[5]

OPPORTUNISTIC PULMONARY INFECTIONS

Physicians frequently treat malignant and many nonmalignant diseases with immunosuppressive agents. The incidence of pulmonary opportunistic infection is surprisingly high. Those illnesses which can be diagnosed by transbronchial lung biopsy are pneumocystis carinii, disseminated fungal and viral infections. The differentiation between drug induced lung injury and infection can be made easily with the tissue provided by this technique. Important cultures and cytologic washings may also be obtained. One drawback is the severity of the underlying illness and the tolerance of the patient to a bronchoscopic examination. Hypoxemia can usually be overcome with supplemental oxygen and thrombocytopenia with platelet transfusions. Most infectious disease groups favor a vigorous approach to the infected compromised host.

TOXIC INHALATION INJURY

In cases of presumed or suspected toxic inhalation injury, the severity and extent of damage can be assessed by direct visualization of the tracheobronchial tree. If no damage can be seen, the likelihood of inhalation or significant amounts of toxin is small. If damage is seen, one can prepare for possible respiratory failure and treat accordingly.

ASSESSMENT OF TRACHEOMALACIA

With the advent of the low pressure cuff endotracheal tube, the incidence of tracheomalacia following intubation has drastically declined. It nonetheless still exists where cuff pressures are not monitored and high or the tube is poorly secured. The exact site and extent of the lesion can be determined by direct visualization.

RECURRENT LARYNGEAL NERVE PARALYSIS

Although occasionally a spontaneous benign process, the recurrent laryngeal nerve paralysis usually denotes invasion of the nerve, either surgically or by tumor. Tumor is probably the most frequent cause and its position is frequently accessible to the bronchoscope.

THERAPEUTIC INDICATIONS

REMOVAL OF FOREIGN BODIES

In the 1920's, bronchoscopy was primarily considered a procedure for the removal of foreign bodies. Only later did other indications arise. The flexible fiberoptic bronchoscope with the appropriate forceps or snare is a versatile tool with which one can remove most foreign bodies.

SECRETION RETENTION, MUCOUS PLUGGING AND ALTELECTASIS

In the patient with prior pulmonary disease and recent surgery, secretion retention and mucous plugging with subsequent atelectasis and possible pneumonia are not uncommon. The bronchoscope is of proven benefit in removing these secretions and is instrumental in the subsequent re-expansion of the lung or segment involved. Occasionally, the prevention of atelectasis can be accomplished with timely removal of secretions and pulmonary lavage through the bronchoscope.

LUNG ABSCESS

Lung abscesses are becoming less frequent. If, however, one occurs and does not drain spontaneously, it can be persuaded to do so by the performance of a bronchoscopic examination and puncturing of the abscess cavity through the bronchial wall. Once accomplished, drainage usually persists.

ASPIRATION

Initial diagnosis and treatment of aspiration of stomach contents can be accomplished by bronchoscopy. Large food particles can be washed away and aspirated, thereby lessening somewhat the inflammatory response which usually follows. The lavage of simple stomach acid in the absence of food is of no demonstrable value.

DIFFICULT INTUBATION

If a patient cannot be intubated easily, the bronchoscope can be used as a guide on which the endotracheal tube can be placed and moved along into the trachea under direct vision. This is especially useful in patients in whom the neck cannot be extended because of arthritis or spinal injury.

PREOPERATIVE ASSESSMENT

In any patient requiring a thoracotomy and lung resection of any size, preoperative bronchoscopy should be performed. This has been the rule for most thoracic surgeons for some time. Even when the lesion is peripheral, bronchial examination will occasionally disclose unsuspected metastases, thereby precluding thoracotomy. Bronchoscopic examination can also define the extent of the tumor and modify the surgical procedure.

Selective bronchography for the diagnosis and location of the extent of bronchiectasis can be useful. If the lesion can be demonstrated to be truly localized, surgery may be indicated. Bronchography might also reveal the cause of recurrent localized pneumonia, such as a broncholith, neoplasm, or foreign body.

FLEXIBLE vs. RIGID BRONCHOSCOPIC EXAMINATION

The flexible fiberoptic bronchoscope has a detection rate of cancer of the lung over two times that of the rigid bronchoscope.[6] Mechanical factors with limitation of neck extension favor the use of a flexible instrument. Localization of hemoptysis is much more accurate with the fiberscope. The flexible bronchoscope is also the instrument of choice where lavage and secretion removal are required. One may obtain cultures more easily through the flexible fiberscope. In persons requiring mechanical ventilation, the only instrument that can be used with ease is the flexible bronchoscope.

The rigid bronchoscope is the instrument of choice in small children, for endobronchial tumor resection, massive hemoptysis, foreign body retrieval, and for manipulation of very vascular tumors.

SUMMARY

Although the bronchoscope was initially developed for foreign body retrieval, innovative physicians have found new uses for the technique. The introduction of the flexible bronchofiberoscope has widened the indication for bronchoscopy and has made it a safe and relatively inexpensive tool with which we can intimately examine the tracheobronchial tree. The use of steerable catheter techniques under fluoroscopic control should be considered complimentary to the existing direct visual system.

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Arizona Medicine

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The Dark Age is Over

With the increasing amount of paper work and ancillary activities which we all must perform in the course of our daily activities we sometimes lose sight of the fact that the best spokespersons for the current sytle of medical care in the United States are our patients. We all tend to take for granted their visits to our office and the care we administer to them when in fact the visit to "My doctor" is a major activity for the patient. Patients listen, think about and act on what we say. I really don't think we appreciate just what powers we harbor. We are instant authorities in all matters and even an offhand remark can lead to devastating results as we all have unfortunately probably learned in the past. So why not use this "built-in" forum to propagate what we feel is a healthy and viable health care system?

We first, though, have to be sure that we are really giving the most we can to our patients. Patients want a concerned, interested and empathetic physician who doesn't have to be a "hot-shot" medically. By just spending more time and listening to our patients, we can greatly improve our image and in turn use this as a positive force for our own position. The rapidly changing patient base will lead to increasing competition for patients and we need to make our points now before it's too late. The most trivial complaint is viewed by the patient as important and we must deal with it that way, until we resolve it appropriately. We can no longer be arrogant or irrelevant to our patients. Someone once offered the following advice in choosing a "good" physician: "He is a good doc if he thinks of you when you are not sick." Setting aside 15 minutes a day to call five patients who have chronic illnesses and asking them, "How do you feel?" is probably the best and easiest medicine to administer in this way. It is amazing how appreciative the patients are when you care enough to call.

All of us enhance our images in the community by partaking in community secular and non-secular organizations. However, how many of us actually use our positions to influence public opinion about our situation? You say it's not ethical, it's self-serving, but who is going to stand up for what we know is a good, albeit expensive, system? There is a lot of truth in the statement that patients love *their* physician but distrust the medical profession. If *their* physician spoke up and made the "profession" more real we might have more impact. I firmly believe we are on our own and must use all the influence we can garner to bring our position into the open. It will mean accepting criticisms and dealing with them for we are not perfect. It will also mean accepting criticism from our peers who do not feel we should "debase" our profession by "getting involved." But, involved we are, like it or not, and we have to get our hands dirty. It's time to stop sweeping the criticisms under the rug to maintain an image that is no longer viable.

Any activity which promotes our style of medical care in our community should be welcomed and encouraged by the county as well as the state medical associations. Our members who are able spokespersons should be encouraged to do what they can to help us all.

Marshall B. Block, M.D.
Editor

The Family Practice Preceptorship

"I felt like a REAL physician . . . I wanted to stay . . . It was the highlight of my medical education." These are typical expressions of enthusiasm from senior medical students who have spent six weeks with Arizona physicians for preceptorship training.

When questioned about the most memorable experience of the preceptorship, student comments are often repetitive but also vary a great deal, as indicated below:

> "A patient stopped me in Sambo's and pleaded with me for an hour to practice in Kingman."
>
> "The caring attitude of the preceptor."
>
> "Home visits with the Public Health Nurse."
>
> "Being asked by some of the local kids to come back to play basketball with them."
>
> "Handling an entire delivery on my own, with supervision."
>
> "Treating a Navajo Medicine Man."
>
> "Dealing with psychiatric problems in the family practice setting."
>
> "Exposure to counseling and patient education techniques."
>
> "None — each day had its unique experiences."

As presently structured, the preceptorship program began on July 1, 1975 with the award of a grant from the HEW Bureau of Health Manpower to the Department of Family & Community Medicine for program development and operation. With the pioneering collaboration of Drs. Robert V. Horan, Wallace Mulligan and John J. Standifer, three model training sites were developed: an occupational health site in Morenci, an Indian health site in Ganado and a rural health site in Kingman. Dr. Daniel O. Levinson has served as director of the program since its inception.

During the first year of the program, five Arizona students and six from other universities were trained by Arizona physician/preceptors. By the end of the third year of the program (June 30, 1978), a total of 66 students had been trained by Arizona physicians, 30 Arizona students and 36 from other universities. An additional 12 Arizona students were trained by out-of-state preceptors.

With the increase in student demand for preceptorships, additional training sites have been opened throughout the state, representative of the variety of practices available to family physicians and of Arizona's cultural, economic and geographical diversity. Twenty-eight training sites in 21 communities are now available.

Data have been collected since the beginning of the program to determine the effect of preceptorship training on clinical skill development, career choices and attitudes concerning practice locations. Of the 42 Arizona students, 24 have entered primary care residencies, 14 of which are family practice. Ten are in specialty programs. Eight have not yet made residency choices. Information is not available on the residency choices of students from other universities.

Students are required to assess their level of competency among a wide range of skills and procedures before and after the preceptorship. Comparison of the pre and post ratings consistently shows a significant increase in the student's level of confidence.

The post form also requests the student to indicate the size of the community in which he or she would like to practice. To date, no correlation is seen between the size of the student's hometown and the size of the community in which he or she hopes to practice. For example, of the 25 students who came from hometowns of 100,000 or more, only 9 presently plan to practice in communities of that size. Eleven hope to practice in communities ranging in size from 5,000 to 25,000. With the caveat that the sample is too small (48) for findings to be significant, it is interesting to note the present tendency among students who have had preceptorships with Arizona physicians to show strong interest in small town practices, regardless of hometown size. This contradicts the widely held opinion that if physicians are to be attracted to small communities, students must be recruited from those communities.

One explanation for the interest in practicing in small communities may be that students discover, often to their surprise, that physicians in small communities can and do lead satisfying lives. They find that good medicine is practiced, that the preceptor is not the lone physician in the community, that excellent referral systems are developed and that heartwarming physician-patient relationships flourish in small town practices. They also are delighted to discover that physicians in small communities are able to arrange time to enjoy their families and other personal interests. It should not be surprising that students tend to look upon their preceptors as excellent role models and when they return to the campus, they say, "I wanted to stay."

Helen Oldham, Administrator
Family Practice
Preceptorship Program
Department of Family
& Community Medicine

Louis J. Kettel, M.D.
Dean, College of Medicine
University of Arizona

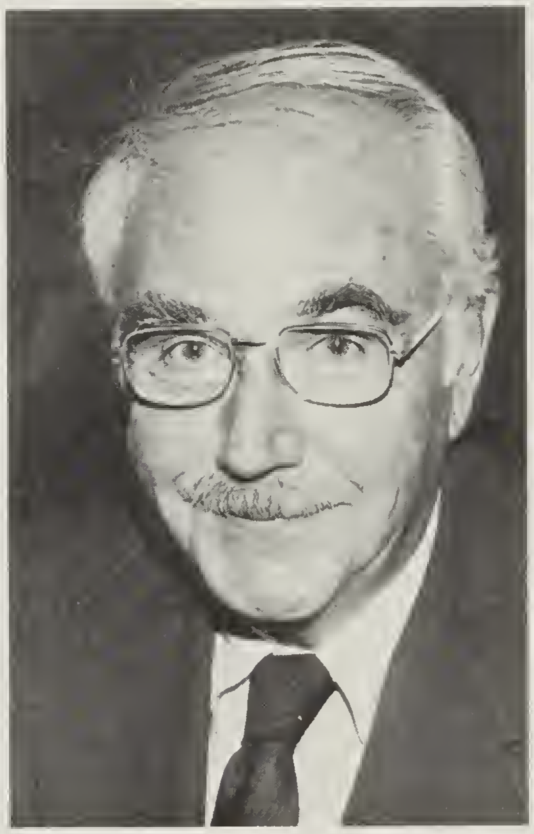
Auxiliary Highlights

National Auxiliary encouragement toward new directions to maintain vitality was evidenced by guest speakers of some reknown at the Fall Conference. The successful expansion to two days was an inovation itself for Arizona and gave opportunity to extend the learning experience beyond current Auxiliary program by allowing time for input from outside speakers. Tom Fullmer, College of Business Administration, ASU; Mary Jo West, KOOL-TV newscaster; and Lou Baldwin, Director of Nursing at John C. Lincoln Hospital, offered meaningful expertise in their respective subjects. Appropriate application of their discussions can be recommended to doctors seeking program material.

Fullmer's *Managing Time* presentation is scientifically adaptable and personally useful. His ultimate theory is that if one is comfortable with procrastination, perfection, clutter, rushing, or workaholism on an habitual basis, then it becomes a problem only to the onlooker; and that was a welcome thought! Professor Fuller presents selective approaches to time management from his director position of The Productivity Institute at ASU and blends good humor with solid message.

The long range picture and the convention committee are bookends for the new dawn coming in the Physician and Auxiliary relationship. More shared time during the state convention has developed from mutual concern over matters of common effect. Time to talk will be programmed for the Safari meeting, and the joys and sorrows of physicians' marriages may be a ventilation highlight. The old "heal thyself" adage may be due for renewal through harmony and accord fostered by shared discussion time; so plan to join in, Doctor. After all, we do recognize the existance of prescription problems as well as problem prescriptions. Why ignore them when they appear at home? Who knows, your problem may be someone else's prescription.

Mrs. Melvin W. (Jean) Phillips
Auxiliary Editor



William J. Moore, M.D.

William J. Moore, M.D., was awarded the Hon Kachina by the Luke Men of St. Luke's Hospital Medical Center as a *health care professional*. The Hon Kachina Award, which symbolizes the strongest healing powers in Indian lore, was presented at the second annual award dinner at the Arizona Biltmore Hotel on November 3, 1978. He was chosen from eight finalists in three categories — 1) individual health care professionals; 2) individual volunteers and; 3) organizations. All eight finalists were honored at the dinner in an effort to make the public aware of the importance of these volunteer health care activities and to encourage more participation in local communities.

Dr. Moore has been credited by his peers for excellence in maternal and child health care. During his professional career in Arizona, numerous actions were initiated by Dr. Moore which contributed to a decrease in the State's perinatal mortality rate from one of the worst in the nation to one of the lowest.

After an automobile accident which left him unable to carry on an active clinical practice in obstetrics and gynecology, Dr. Moore was forced to choose another profession. He pursued a Master's Degree in Public Health, settled in Arizona and immediately became active in professional as well as volunteer health care.

Arriving in Arizona, Dr. Moore assumed the position of Director, Bureau of Maternal and Child Health, Arizona Department of Health Services.

His involvement in health care broadened significantly from 1964 to 1966 while commissioner. Programs and legislation he dealt with concerned child day care, Medicare, tuberculosis control, mental health, the licensing and inspecting of clinical laboratories and, following his personal interest in maternal and child health, laying the foundation for the Health Department's present Premature Transport and Newborn Intensive Care Program. This program was a coordinated effort of community leaders, state and county health departments, hospitals, public carriers, insurance companies, social workers, physicians and nurses.

During 1966 to 1972 he was an officer to the Ford Foundation serving as consultant for pilot programs on three continents for maternal and infant care.

From 1972 to 1975 Dr. Moore was director of Family Planning and Maternal and Infant Care Programs, Maricopa County Health Department.

In 1975, partly as a result of the successful Premature Transport Program, Arizona was asked by a large private foundation to develop a statewide perinatal care program. This in now known as the Arizona (Regional) Perinatal Program, another effort of integration and coordination of people and institutions. The system's success has brought national recognition to Arizona. Dr. Moore played an active part in development of the Arizona Perinatal Program and was its director until his retirement in April, 1978.

Moore is now retired and lives with his wife, Mary Ellen, in Phoenix.

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AD HOC COMMITTEE ON AN ECONOMIC ORGANIZATION FOR ARIZONA PHYSICIANS

The first meeting of the Ad Hoc Committee on an Economic Organization for Arizona Physicians of the Arizona Medical Association, Inc., held at 810 West Bethany Home Road, Phoenix, Arizona, on Saturday, October 7, 1978, convened at 1:41 p.m., Alfred F. Miller, M.D., Chairman, presiding.

HOUSE OF DELEGATES RESOLUTION NO. 1-78 AND LEGAL OPINION

The House of Delegates Resolution No. 1-78, together with the rewrite thereof, and counsel's legal opinion dated March 1, 1978 were discussed at length by the committee, in conjunction with the committee's duties, i.e., to determine whether in fact there exists a need for the formation of an Economic Organization for Arizona Physicians, and, if so, whether such an organization should be formed as a part of or entirely separate from the Arizona Medical Association.

Dr. Switzer and Dr. Burkhardt presented a brief report on the activities and success of a similar group now functioning in Pima County, as well as those with which they had recently had contact in California and Colorado.

FUTURE PLANS

It was the consensus of the membership that no final determination or recommendations to the Board of Directors could be made until further research by the committee had been completed. It was determined that Bruce Robinson, on behalf of the committee, would secure as soon as practical as much information as possible regarding similar type organizations presently in existence throughout the nation and, additionally, request from legal counsel an opinion as to whether it would be feasible if an organization were established outside the ArMA entity to maintain a liaison between ArMA and such organization. After distribution of such information, the committee would again meet and at that time make its final recommendations to the Board for its final determination.

GOVERNMENTAL SERVICES COMMITTEE

The meeting of the Governmental Services Committee of the Arizona Medical Association, Inc., held at 810 West Bethany Home Road, Phoenix, Arizona, on Wednesday, October 18, 1978, quorum being present, convened at 6:48 p.m., Louis C. Kossuth, M.D., Chairman, presiding.

Report of the Chairman

Dr. Kossuth welcomed the members of the first meeting of the Governmental Services Committee for the current year. For information purposes, he gave an update on the health system agencies being developed in Arizona and his concern that the plans being developed by each agency will shape the delivery of health care in Arizona for years to come. Dr. Kossuth indicated that he hoped the committee would address the activities of the HSAs, planning agencies, rules and regulations of varied state agencies as they pertain to health care as well as federal rules and regulations and legislation in the health care arena.

Health Planning and HSAs

Frank DePaoli, M.D., Chairman, Maricopa County Medical Society's newly formed committee, Physicians' Health Force, presented to this Committee a report of the Committee To Review Central Arizona Health Systems Agency. The purpose of his committee was to re-evaluate the Maricopa County Medical Society's relationship with CAHSA and make specific recommendations on legislative changes that may be made in the present law to improve relationships with that group and to improve the efficiency and fairness of their deliberations. He informed us that his committee conducted interviews with legislators, the department of Health Services, CAHSA staff and ex-staff, the Board President of CAHSA, hospital administrators and physicians. They reviewed selected articles including the AMA Profile; reviewed CAHSA data; and reviewed HSA and Medical Society relationships in Minnesota, Michigan, Maryland, Texas, and Washington.

The Committee To Review Central Arizona Health Systems Agencies recommended to the Board of Directors of the Maricopa County Medical Society that they 1) support the repeal of public law 93-641; 2) failing a repeal, support amendments proposed by AMA to modify the current law; 3) support an amendment allowing for an alternative state mechanism; 4) support efforts to separate the regulation from the planning functions of HSAs; 5) support the establishment of appropriate society committees in liaison with the local HSAs as well as SHCC: 6) retention of a full time research person to study, evaluate, and document the effects of local, state, and federal laws and agencies on the practice of medicine; 7) a liaison member be appointed from this committee to the county committee.

The Maricopa County Medical Society has established the Physicians' Health Force which Dr. DePaoli chairs to achieve the following objectives:

1) Advocate the patients' priorities in the health planning activities.
2) Facilitate the flow of information on health planning to physicians and patients.
3) Assist in all possible ways physicians and "consumers" (patients) who serve on the Central Arizona Health Systems Agency Board and Committees.
4) Evaluate selected applications to the Central Arizona Health Systems Agency prior to any extensive planning process for certificate of need applications.
5) Present the Medical Society's recommendations to the Board of Directors of the Central Arizona Health Systems Agency regarding long range medical plans.

IT WAS MOVED AND CARRIED TO RECOMMEND TO THE BOARD OF DIRECTORS THAT THE ARIZONA MEDICAL ASSOCIATION APPROACH THE STATEWIDE HEALTH COORDINATING COUNCIL RELATIVE TO OUR APPOINTING A MEDICAL ADVISORY COMMITTEE TO IT.

IT WAS MOVED AND CARRIED TO RECOMMEND TO THE EXECUTIVE COMMITTEE THAT A FULL-TIME EMPLOYEE BE HIRED, IF FINANCIALLY FEASIBLE, TO RESEARCH LEGISLATION, HEALTH PLANNING, AND OTHER GOVERNMENT ACTIVITIES RELATIVE TO MEDICINE.

IT WAS MOVED AND CARRIED TO RECOMMEND TO THE MARICOPA COUNTY MEDICAL SOCIETY'S PHYSICIANS' HEALTH FORCE THAT MARVIN C. SCHNEIDER, M.D., BE APPOINTED TO ITS MEMBERSHIP FOR LIAISON PURPOSES.

AMA Legislative "Key Contact Program"

The AMA suggests that each medical association develop one or more physicians to be a close ally to each of our federal legislators for appropriate medical input and to receive feedback from him. It is also suggested that a similar program be developed on the state level. It was emphasized that a serious commitment to a Key Contact Program, outlined in a lengthy report by the AMA, is required to make it worthwhile. Physicians as Key Contact people must keep abreast of all details of legislative activities in order to be effective. Considerable discussion ensued.

IT WAS MOVED AND CARRIED TO RECOMMEND TO THE ARIZONA MEDICAL ASSOCIATION AUXILIARY, INC. TO CONSIDER DEVELOPMENT OF THE AMA SUGGESTED KEY CONTACT PROGRAM FOR OUR CONGRESSMEN.

National Health Insurance

The American Medical Association has asked for our view of H.R. 1818, the AMA sponsored comprehensive health insurance proposal. They asked us to consider the following options: 1) support of the present bill without substantive change; 2) modification of provisions, addressing specifics such as coverage by employers, or functions of the Health Insurance Board; 3) a substitute limited proposal, e.g. one that might limit the scope of coverage or provide only for catastrophic coverage; 4) an incremental (phase-in) approach; or 5) no AMA proposal at all.

Attention was called to the fact that the Arizona Medical Association House of Delegates adopted resolution 11-77 in which they instructed the officers of the association to "debate and rebut vigorously and appropriately those features of these bills which inhibit good medical practice."

IT WAS MOVED AND CARRIED THAT THE COMMITTEE INFORM THE AMERICAN MEDICAL ASSOCIATION THAT WE SUPPORT THE PRESENT BILL WITHOUT SUBSTANTIVE CHANGE, RESPECTFULLY REQUESTING THAT THE AMA REBUT VIGOROUSLY AND APPROPRIATELY THOSE FEATURES OF PROPOSED LEGISLATION WHICH MIGHT INHIBIT GOOD MEDICAL PRACTICE. FURTHER, THIS ASSOCIATION WOULD NOT BE ADVERSE TO SEEING AN INCREMENTAL APPROACH TO NATIONAL HEALTH INSURANCE WITH CATASTROPHIC INSURANCE COVERAGE BEING THE FIRST INCREMENT IN NEW LEGISLATION.

Position Statement, National Health Insurance

The Executive Committee, in a letter dated August 16, 1978, requested the committee to consider a position paper on National Health Insurance for Arizona. It was noted that the

Medical Association of Georgia adopted a position statement which would require Congress to balance the federal budget before giving any consideration to National Health Insurance. During discussion, it was stated that this may be a moot point because legislation was recently adopted calling for a balanced budget by 1980.

IT WAS MOVED AND CARRIED TO TABLE PREPARATION OF A POSITION STATEMENT BY THIS ASSOCIATION DEALING WITH NATIONAL HEALTH INSURANCE.

OTHER BUSINESS

Public Relations

As a result of headlines in this morning's paper concerning the Pima and Maricopa County Foundations For Medical Care role in price fixing, there was discussion concerning the association's role in refuting improper statements in the press and other media.

IT WAS MOVED AND CARRIED TO RECOMMEND TO THE EXECUTIVE COMMITTEE THAT PRESS CONFERENCES BE CALLED TO REFUTE FALSE ALLEGATIONS AGAINST THE MEDICAL PROFESSION AND TO PROMOTE THE PRACTICE OF MEDICINE TO THE PUBLIC.

EXECUTIVE COMMITTEE

The meeting of the Executive Committee of the Arizona Medical Association, Inc., held at 810 West Bethany Home Road, Phoenix, Arizona, on Friday, October 20, 1978, a quorum being present, convened at 6:42 p.m., Richard L. Dexter, M.D., President and Chairman, presiding.

DEPARTMENT OF HEALTH SERVICES

Medical Update

Dr. Dandoy reported on a new publication of the Arizona Department of Health Services entitled "Medical Update," a copy of which was distributed to the meeting. The present plan is that the publication will be issued on an "as-needed" basis and will contain information regarding medical matters of statewide concern; the topic of this issue being that of organophosphate toxicity.

Crippled Children's Services

Dr. Dandoy briefly discussed her letter of 10/2/78 which contained a request for the appointment of a group of physicians to present to the legislative committee the needs of the Crippled Children's Services for additional funding. It was the consensus of opinion that the group should include both Phoenix and Tucson physicians who would be fully conversant on the proposed budget and willing and able to devote the time required in this endeavor. It was agreed that initial contact would be made with Daniel T. Cloud, M.D., Christopher A. Guarino, M.D., Richard D. Zonis, M.D., and James E. O'Hare, M.D., to see if they would be willing to accept this responsibility.

Dispensing of Drugs

Dr. Dandoy touched on the subject of drug dispensing by nurses and the fact that it again appeared to be a rising problem.

SPECIALTY SOCIETY SERVICES DEPARTMENT

James E. Campbell, M.D., and Derald G. May, M.D., addressed the committee regarding their recent concerns about the policies of the Association relating to the Specialty Society Services Department and its function on behalf of the Arizona Psychiatric Society.

Following a lengthy discussion, it was the general consensus of opinion that all concerns had arisen from a lack of communication and understanding and it was agreed that a letter should be prepared to all specialty societies presently being served by the department setting forth the functions of the department, both secretarial and accounting, as well as the normal routine maintained by the Association and its staff in its day-to-day operations, which encompassed the activities of the Specialty Society Services Department. Additionally, it was agreed that such letter include a request for any society having special needs or requirements which might deviate from those outlined to contact the Executive Director of the Association to discuss possible changes to meet those needs.

Also discussed was the possibility of a contract with the societies regarding the services performed, which contract would be renewable on an annual basis when officers of the societies were changed.

ALL AMERICAN MEDICAL HALL OF FAME

The recommendations of John W. Kennedy, M.D., for nominations to the All American Hall of Fame were considered by the committee.

IT WAS MOVED AND CARRIED THAT THE EXECUTIVE COMMITTEE SUBMIT THE NAMES OF ALEXANDER MacKENZIE TUTHILL, M.D., ROBERT NELSON LOONEY, M.D., GEORGE EMERY GOODFELLOW, M.D., W. WARNER WATKINS, M.D., ERROL PAYNE PALMER, SR., M.D., ANCIL MARTIN, M.D., ADOLPHUS H. NOON, M.D., AND JOHN W. FLINN, M.D., AS THE ASSOCIATION'S NOMINATIONS TO THE ALL AMERICAN HALL OF FAME AND THAT THE COMMITTEE INFORM THE BOARD OF DIRECTORS OF ITS ACTION.

It was the consensus of the membership that a letter be mailed to Dr. Kennedy expressing the appreciation of the Association for the time and effort expended by him in the research involved in the compilation of names for submission to the committee.

WESTERN PHYSICIANS PURCHASING ASSOCIATION

Status Report

Dr. Kahle presented an update of the newly-formed Western Physicians Purchasing Association, advising the committee that final negotiations with Schering Corporation were scheduled for November 1, 1978, to be followed on November 4, 1978, with a meeting of the Board of Directors. Dr. Kahle further reported that they were hoping to come up with a plan to enable the smaller states to come into the WPPA and that there was also being considered a "Blue Chip" plan to be included in the package ultimately offered to the membership. Dr. Kahle advised that interest and enthusiasm had already been expressed by physicians throughout the state, having already received several inquiries following the article contained in the latest issue of *Medical Memo*.

Appointment of Purchasing Committee

After a brief discussion regarding members for a purchasing committee, it was agreed that the following persons would be contacted regarding their interest in serving on such a committee: John F. Kahle, M.D., Chairman, William R. Myers, M.D., James M. Hurley, M.D., Robert F. Crawford, M.D., Neopito L. Robles, M.D., Vernor F. Lovett, M.D., William E. Crisp, M.D., James S. Pucelik, M.D., Morton H. Dubnow, M.D., Melvin D. Roberts, M.D., Merrill M. Abeshaus, M.D., Everett Colbert, Ed DeValk and Olin Ragland.

BOMEX AND THE "SUNSET LAW"

Paul Boykin's letter of 9/28/78. RECEIVED.

PROJECT FOR THE STUDY OF LEARNING DISABLED CHILDREN WITH READING PROBLEMS

The request for endorsement of Warren Hays, Associate Professor of the College of Education at the University of Arizona, dated 9/26/78 was discussed, with Dr. Dexter giving a brief background description of the project and Professor Hays and also advising the committee that he felt the project to be a necessary and worthy one.

IT WAS MOVED AND CARRIED THAT THE ASSOCIATION ENDORSE THE PROGRAM OUTLINED IN WARREN HAYS' LETTER AS A PROJECT FOR THE STUDY OF LEARNING DISABLED CHILDREN WITH READING PROBLEMS IN ITS ENTIRETY.

SOUTH PHOENIX AREA HEALTH EDUCATION CENTER PROPOSAL

Anthony F. Vuturo, M.D.'s letter of 10/12/78 advising that the project had not received funding. RECEIVED.

AMA LETTER OF 9/27/78

AMA's letter of 9/27/78 requesting comment on appointments. RECEIVED FOR INFORMATION.

MEMBERSHIP COMMITTEE

Discussion was held regarding the need for a committee to be established at the state level to endeavor to recruit new members into the Association via the county societies.

IT WAS MOVED AND CARRIED THAT THE EXECUTIVE COMMITTEE RECOMMEND TO THE BOARD OF DIRECTORS THAT A MEMBERSHIP COMMITTEE BE FORMED TO CONSIST OF THE DISTRICT DIRECTORS THROUGHOUT THE STATE DIRECTED TOWARD A FULL SCALE RECRUITING PROGRAM FOR NEW MEMBERS.

Brenden Phibbs, M.D., letter of 9/6/78. RECEIVED.

SECOND OPINION PROGRAM

Robert A. Derzon letter of 10/10/78. RECEIVED.

JOSEPH B. GOLDBERGER AWARD IN CLINICAL MEDICINE

Mervyn Willard, M.D., letter of 9/28/78. RECEIVED.

It was determined that a letter should be sent to Dr. Willard in an attempt to allay his concern that he may have been prematurely nominated for this award.

MEDICAL EDUCATION COMMITTEE

LCCME Situation

Misty Coumbe reported to the committee the concern of the Medical Education Committee relating to the placing of control regarding accreditation of continuing medical education in the Liaison Counsel on Continuing Medical Education and the committee's desire that the Association continue to accredit CME as it had in the past prior to the establishment of the LCCME.

The matter was received by the Executive Committee for presentation to the Board of Directors.

CME Certification

Mrs. Coumbe addressed the committee regarding the request by BOMEX that the Association handle CME certification for BOMEX under its new contemplated "60 category 1 hours." After discussion of the matter, any action was deferred until further discussions had been held with counsel for BOMEX and counsel for the Association relative to the wording contained in the various amendments to the Medical Practice Act as contemplated by BOMEX.

AD HOC COMMITTEE ON AN ECONOMIC ORGANIZATION FOR ARIZONA PHYSICIANS

Dr. Dexter briefly reported on the first meeting of the Ad Hoc Committee on an Economic Organization for Arizona Physicians which had been held on October 7, 1978, at which was discussed the feasibility and necessity of such an organization in Arizona, as well as the present functioning of the Physicians Guild in Tucson and two national unions with which the Guild had had some contact. The committee delayed any formal action regarding the establishment of such an organization pending receipt of information from other states regarding this type of organization presently in existence.

OTHER BUSINESS

Council of Professions Liaison

Mr. Robinson advised the committee of the request received from Dr. Chisholm that someone be appointed to replace him as a delegate to the Council and, after discussion, it was agreed that the following persons would be contacted in this regard in the order listed: Stephen R. Stein, M.D., Joseph W. Hanss, Jr., M.D., Selma E. Targovnik, M.D., and Jerome H. Targovnik, M.D.

Future Medical Meetings

CONTINUING MEDICAL EDUCATION

The following institutions and organizations have been accredited for their continuing medical education programs by the Liaison Committee on Continuing Medical Education.

- Arizona Heart Institute
- Arizona Medical Association, Inc.
- Arizona State Hospital, Phoenix
- Desert Samaritan Hospital, Mesa
- Good Samaritan Hospital, Phoenix
- Health Maintenance Associates
- Phoenix Indian Medical Center
- Phoenix Psychiatric Council
- Maricopa County General Hospital, Phoenix
- Memorial Hospital, Phoenix
- St. Luke's Hospital & Medical Center, Phoenix
- St. Joseph's Hospital & Medical Center, Phoenix
- Tucson Hospitals Medical Education Program, Tucson
- U of A College of Medicine
- Veterans Administration Center, Prescott
- Veterans Administration Hospital, Phoenix

The accredited institutions and organizations above produce a variety of continuing medical education programs. Each accredited institution and organization is responsible for designating which of these programs meet ArMA's requirements for Category 1 credit. Physicians who participate in programs which are designated Category 1 by accredited institutions will receive Category 1 credit toward the ArMA Certificate in CME and the AMA's Physician's Recognition Award.

Individual program listings below indicate Category of CME. Where not indicated, no credit has been approved. For further information on any programs, contact person named.

DECEMBER

Emergency Care Update

December 14, 15 & 16, 1978. Arizona Health Sciences Center, U of A, Tucson, AZ. Sponsor: U of A College of Medicine. Contact: Office of Continuing Medical Education, Attn.: Katharine C. Blosch, University of Arizona College of Medicine, Arizona Health Sciences Center, Tucson, AZ 85724. (602) 626-6173. Approved for 16.5 hours of category 1 credit.

1979

JANUARY

Arizona Medical Assistants Association Maricopa Chapter

January 4, 1979, 7:15 p.m., Arizona Medical Association Building, 810 W. Bethany Home Rd., Phoenix, AZ. Contact: Marylou at 944-4491.

10th ANNUAL OB-GYN SEMINAR IN OBSTETRICS AND GYNECOLOGY

January 11-12, 1979, Health Sciences Center, Tucson, AZ. Approved for category 1 credit.

Lifestyles and Health

January 13 & 14, 1979. Sherton-Palace Hotel, San Francisco, CA. Sponsor: University of California, San Francisco. Contact: Ms. Bruce, University of California, San Francisco, Continuing Education In Health Sciences, 1343 3rd Ave., San Francisco, CA 94143.

Recent Advances in Geriatric Psychiatry

January 20, 1979, Maricopa County General Hospital, Phoenix, AZ. Sponsor: Maricopa County General Hospital. Contact: Medical Education Office, Maricopa County General Hospital, 2601 E. Roosevelt, Phoenix, AZ 85008. Approved for 4 hours of category 1 credit.

Bone Imaging: A Clinical Practicum

January 21, 1979, Phoenix, AZ. Sponsor: The Society of Nuclear Medicine. Contact: Karen J. Chang, Society of Nuclear Medicine, 475 Park Ave., South, New York, NY 10016. Approved for 5 hours of category 1 credit.

Critical Care of Neurological and Neurosurgical Emergencies

January 25-27, 1979. Camelback Inn, Phoenix, AZ. Sponsor: St. Joseph's Hospital and Medical Center, Barrow Neurological Institute. Contact: Richard A. Thompson, M.D., Chairman, 350 W. Thomas Rd., Phoenix, AZ 85013. Approved for category 1 credit.

5th Annual MCGH Urological Seminar

January 27 & 28, 1979. Doubletree Inn, Scottsdale, AZ 85251. Sponsor: Maricopa County General Hospital. Contact: Medical Education Office, Maricopa County General Hospital, 2601 E. Roosevelt, Phoenix, AZ 85008. Approved for 18 hours of category 1 credit.

Selected Horizons in Infection Diagnosis and Laboratory Management

January 27-28, 1979, Tucson Marriott Hotel, Tucson, AZ. Sponsors: Arizona Society of Pathologists and the American Society of Clinical Pathologists. Contact: Carol Turner, 810 W. Bethany Home Rd., Phoenix, AZ 85013. (602) 246-8901. Approved for 7 hours category 1 credit.

Medical History Society of Arizona

January 29, 1979, 7:30 p.m. Contact: William C. Weese, M.D., President, (602) 265-0000.

FEBRUARY

Southwest Desert Symposium In Anesthesiology

February 2-4, 1979. Doubletree Inn, Tucson, AZ. Sponsor: U of A College of Medicine, Dept. of Anesthesiology, and Office of Continuing Medical Education. Contact: Office of Continuing Medical Education, U of A College of Medicine, Health Sciences Center, Tucson, AZ 85724. Approved for 17 hours of category 1 credit.

Selected Topics in Neuroradiology

February 7-9, 1979. San Diego, CA. Sponsor: San Diego Radiology Research & Education Foundation and the American College of Radiology. Contact: Mary J. Ryals, Radiology, P.O. Box 2305, La Jolla, CA 92038. (714) 453-7500, Ex. 3711. Approved for 22½ hours of category 1 credit.

4th Annual Seminar Radiology of the Abdomen
February 9, 10, 11, 1979, Safari Hotel, Scottsdale, AZ. Sponsor: Maricopa County General Hospital. Contact: Austin R. Sandrock, M.D., Program Chairman, Dept. of Radiology, Maricopa County General Hospital, 2601 E. Roosevelt St., Phoenix, AZ 85008. Approved for 15 hours of category 1 credit.

Radiology of the Abdomen
February 9-11, 1979. Safari Resort, Scottsdale, AZ. Sponsor: Dept. of Radiology, Maricopa County General Hospital. Contact: Medical Education Office, Maricopa County General Hospital, 2601 E. Roosevelt, Phoenix, AZ 85008. Approved for 15 hours of category 1 credit.

Second Annual Postgraduate Course in OB/GYN
February 14-16, 1979, Scottsdale Hilton Hotel, Scottsdale, AZ. Sponsors: Phoenix OB/GYN Society and Dept. of OB/GYN Maricopa County General Hospital. Contact: Secretary, Phoenix OB/GYN Society, 333 E. Virginia, Ste. 222, Phoenix, AZ 85004, (602) 257-9218. Approved for category 1 credit.

Health Policy and Chronic Illness: The National Debate
February 17 and 18, 1979. Sheraton-Place Hotel, San Francisco, CA. Sponsor: University of California, San Francisco Schools of Medicine. Contact: Ms. Bruce, University of California, San Francisco Continuing Education in Health Sciences, 1343 3rd Ave., San Francisco, CA 94143.

Medical Progress: A Review of Advances in Medicine in Past 5 Years
February 22-24, 1979, Casa Blanca Inn, Scottsdale, AZ. Sponsor: Maricopa County General Hospital. Contact: Medical Education Office, Maricopa County General Hospital, 2601 E. Roosevelt, Phoenix, AZ 85008. Approved for 15 hours of category 1 credit.

Current Advances in Obstetrics and Gynecology
February 14-16, 1979. Scottsdale Hilton Hotel, Scottsdale, AZ. Sponsor: Maricopa County General Hospital. Contact: Medical Education Office, Maricopa County General Hospital, 2601 E. Roosevelt, Phoenix, AZ 85008. Approved for 18 hours of category 1 credit.

16th Annual Meeting of the Federation of Western Societies of Neurological Science, Inc.
February 22-25, 1979. Mountain Shadows, Scottsdale, AZ. Contact: Larry Stern, M.D., Program Chairperson, U of A Dept. of Neurology, Tucson, AZ 85721. Approved for 17 hours of category 1 credit.

ADVANCES IN INTERNAL MEDICINE
February 22-24, 1979, Casa Blanca Inn, Scottsdale, AZ. Sponsor: College of Medicine. Approved for category 1 credit.

1979 ANNUAL SCIENTIFIC MEETING: ARIZONA SOCIETY OF ANESTHESIOLOGISTS
February 24, 25, 1979. Radisson Scottsdale Resort, 7601 E. Indian Bend Rd., Scottsdale, AZ. Sponsor: College of Medicine, Tucson, AZ & Arizona Society of Anesthesiologists. Approved for 10 hours of category 1 credit.

Pediatric Update 1979
February 26 - March 1, 1979. Scottsdale Sheraton Inn, Scottsdale, AZ. Sponsor: St. Joseph's Hospital & Medical Center, Phoenix, AZ. Contact: Tracy L. Trotter, M.D., Dept. of Pediatric Education, St. Joseph's Hospital & Medical Center, 350 West Thomas Rd., Phoenix, AZ 85013. Approved for 16 hours of category 1 credit.

MARCH

Day of G.I. & Liver Disease
March 2, 1979. Camelback Inn, Scottsdale, AZ. Sponsor: St. Joseph's Hospital and Medical Center. Contact: Ethelann Murray, M.D., St. Joseph's Hospital and Medical Center, 350 W. Thomas Rd., Phoenix, AZ 85013. Approved for 6 hours of category 1 credit.

New Mexico Metabolism Symposium
March 8, 9, & 10, 1979, Taos, New Mexico. Contact: Office of Education, Lovelace Medical Center, Albuquerque, New Mexico. (505) 842-7353.

PSYCHOPHARMACOLOGY IN CHILDREN
March 9-11, 1979, Double Tree Inn, Tucson, AZ. Sponsor: College of Medicine. Approved for category 1 credit.

Clinical Recognition and Management Of Heart Disease — 1979
March 22, 23 & 24, 1979. U of A, Health Sciences Center, Main Auditorium. Sponsor: U of A College of Medicine. Contact: Registrar, American College of Physicians, 420 Pine St., Philadelphia, PA 19104.

Second International Conference on the Adjuvant Therapy of Cancer
March 28-31, 1979. Tucson Convention Center, Tucson, AZ. Sponsor: U of A College of Medicine, Cancer Center Division. Contact: Cancer Center Division, U of A College of Medicine, Tucson, AZ 85724. Approved for 23 hours of category 1 credit.

APRIL

FOURTH ANNUAL UPDATE: PRIMARY CARE
April 18-21, 1979, Arizona Health Sciences Center, Tucson, AZ. Sponsor: College of Medicine. Approved for category 1 credit.

88TH ANNUAL MEETING: ARIZONA MEDICAL ASSOCIATION
April 24-28, 1979. Sponsor: Arizona Medical Association, Inc. Contact: Bruce Robinson, Executive Director, 810 W. Bethany Home Rd., Phoenix, AZ 85014. Approved for category 1 credit.

MONTHLY OR WEEKLY

Shrine Medics Meeting
Second Tuesday of each month, Doctors Hospital, 5:45 p.m., J. South Classroom. Sponsor: Shrine Medics. Contact: Robert C. Briggs, M.D., 5121 N. Central Ave., Phoenix, AZ 85012.

Office Psychiatry for the Primary Provider
2nd Monday of month, 4811 N. 7th Street, Phoenix, AZ. Sponsor: Arizona Health Plan. Contact: T.R. Bittker, M.D., Box 5000, Phoenix, AZ 85010. Approved for category 1 credit.

Counter Transference Group
Weekly, Thurs. 8-10 p.m. Sponsor: Phoenix Psychiatric Council. Contact: James E. Campbell, M.D., 5051 N. 34th St., Phoenix, AZ 85018. Approved for 2 hours category 1 credit.

1979

INTERNATIONAL CATARACT SURGERY SYMPOSIUM

February 5, 6, 7

LaPosada Resort Hotel — Scottsdale, Arizona

– sponsored by –

Arizona Foundation for Ophthalmic Research and Education

FACULTY

D. Peter Choyce
England

M. U. Dardenne
Germany

Marvin L. Kwitko
Canada

Michael Blumenthal
Israel

Richard P. Kratz
United States

Donald L. Praeger
United States

John H. Sheets
United States

Robert M. Sinsky
United States

Ronald W. Barnet
United States

Each member of the faculty will describe his own methods of cataract surgery - with and without lens implants - and management of complications.

Mr. Choyce will give a special presentation about his work with Keratoprotheses.

LECTURES AND WORKSHOPS

- When is intracapsular extraction preferred to extracapsular.
- When are angle supported lenses preferred.
- What is the status of posterior chamber lenses.
- What is the role of A-scan biometry.
- What is the treatment for cystoid macular edema.
- Does the Choyce MK IX lens make the MK VIII obsolete.

This symposium is designed to coordinate with "Frontiers of Ophthalmology" February 8, 9, 10. Physicians may attend both meetings and receive 36 hours CME credit.

For further information, write:
Frances Gould, Symposium Coordinator
AFORE
421 North 18th Street, Suite 105
Phoenix, Arizona 85006
Phone: (602) 257-1077

Monthly Meeting of Tucson Radiologists
Last Tues. of month. Plaza International, Tucson, AZ. Sponsor: U of A Medical Center, Dept. of Radiology. Contact: Irwin M. Freundlich, M.D., Arizona Medical Center, Dept. of Radiology, Tucson AZ 85724. Approved for 2 hours category 1 credit.

Pediatric Grand Rounds
Tuesday 7:30-8:30 a.m. in Phoenix: 1st Tues.—Phoenix Indian Hospital, 2nd Tues.—Maricopa County Hospital, 3rd Tues.—Good Samaritan Hospital, 4th Tues.—St. Joseph's Hospital. Sponsor: Maricopa County Hospital (Phoenix Hospital's Affiliated Pediatric Program). Contact: J. Kipp Charlton, M.D., 2601 E. Roosevelt, Phoenix, AZ 85008. Approved for 1 hour per session category 1 credit.

Review of Forensic Pathology, Current Case, Special Topics
Thursday, weekly, 11 a.m., 120 S. 6th Ave., Phoenix, AZ. Sponsor: Arizona Society of Pathologists. Contact: H.H. Karnitschnig, M.D., 120 S. 6th Ave., Phoenix, AZ. Approved for 1 hour per session category 1 credit.

Staff Education Conference
Wednesdays, weekly, 1 p.m., Arizona State Hospital, Phoenix, AZ. Sponsor: Arizona State Hospital. Contact: Howard E. Wulsin, M.D., Arizona State Hospital, 2500 E. Van Buren, Phoenix, AZ 85008. Approved for 1 hour per session category 1 credit.

BARROW NEUROLOGICAL INSTITUTE

Medical Education
Barrow Neurological Institute of St. Joseph's Hospital and Medical Center, 350 W. Thomas Road, Phoenix, AZ 85013. Sponsor: St. Joseph's Hospital & Medical Center. Contact: John R. Green, M.D. Approved for 1 hour category 1 credit.

Neurology Teaching Conference
Tuesdays, 8:30-9:30 a.m., Eighth Floor Conf. Room.

Neurosurgery Morbidity Conference
Wednesdays, 8:15-9:15 a.m., on first and third weeks, Eighth Floor Conference Room.

Neuro-ophthalmology Conference
Tuesdays, 7:30 a.m. in 8th floor neurology conference room.

Spinal Injury Conference
Wednesdays, 8:15-9:15 a.m., on ~~second~~ and fourth weeks, in Neuropathology Conf. Room—a multidisciplinary review of admission by neurosurgeons, orthopedists, and rehabilitation specialists.

Neuropathology of Gross Specimens Conference
Thursdays, 7:30-8:30 a.m. in the Morgue.

Neurology-Neurosurgical Clinical-Neuroradiological and Neuropathological Conference
Fridays, 8-9 a.m., First Floor Conference Room.

Neuropathology or Neuroradiology Conferences
Fridays, 9 a.m., Neuropathology in Neuropathology Conference Room, Neuroradiology in First Floor Conference Room.

Neurorehabilitation Conference
Tuesdays, noon, 8th Floor Conference Room.

Neurosurgical Journal Club
Saturdays, 9-11 a.m., in Eighth Floor Conference Room.

CAMELBACK HOSPITAL

5055 N. 34th St., Phoenix, AZ 85018. Sponsor: Camelback Hospital. Contact: Medical Director.

Patient Staffing Conference
Three times weekly.

DESERT SAMARITAN HOSPITAL

Wednesday evenings, 7 p.m. Sponsor: Desert Samaritan Hospital. Contact: L.A. Rosati, M.D., Laboratory, Desert Samaritan Hospital, Mesa, AZ 85202. Approved for category 1 credit.

GOOD SAMARITAN HOSPITAL

Clinical Cancer Conference
3rd Wednesday, every month, Butler Bldg. Conference Room, Good Samaritan Hospital. Contact: John A. Bruner, M.D., 926 E. McDowell Road, Phoenix, AZ 85006. Approved for 1 hour per session category 1 credit.

Pulmonary Disease Grand Rounds
Mondays, 12 Noon, D-5 North Conference Room, Good Samaritan Hospital, Phoenix, AZ. Sponsor: Pulmonary Disease Teaching Service, Good Samaritan Hospital. Contact: Bernard E. Levine, M.D., Pulmonary Function Laboratory, Good Samaritan Hospital, 1033 E. McDowell Road, Phoenix, AZ 85006. Approved for 1 hour category 1 credit.

MARYVALE SAMARITAN HOSPITAL

Continuing Medical Education Program
Maryvale Samaritan Hospital, every other Wednesday, 7-8 a.m., January 25, 1978 through December 27, 1978. Sponsor: Medical Staff of Maryvale Hospital. Contact: Richard C. Christensen, M.D. Approved for 1 hour per session category 1 credit.

MARICOPA COUNTY GENERAL HOSPITAL

2601 E. Roosevelt, Phoenix, AZ 85008. Sponsor: Maricopa County General Hospital. Contact: H.F. Lenhardt, M.D., Dir. of Medical Education. Approved for category 1 credit.

Total Joint Replacement
Oct. 27 & 28, 1978. Maricopa County General Hospital.

7th Annual Radiology Seminar "Pulmonary Diseases Part II"
Dec. 9 & 10, 1978, Camelback Inn, Scottsdale, AZ 85253.

Recent Advances in Geriatric Psychiatry
January 20, 1979. Maricopa County General Hospital.

5th Annual MCGH Urological Seminar
January 27 & 28, 1979. Doubletree Inn, Scottsdale, AZ 85251.

Current Advances in Obstetrics and Gynecology
Feb. 14, 15 & 16, 1979, Scottsdale Hilton Hotel, Scottsdale, AZ.

Medical Progress: A Review of Advances in Medicine in the Past 5 Years
Feb. 22, 23 & 24, 1979. Carefree Inn, Carefree, AZ 85331.

The Head presented by Department of Radiology, Feb. 9, 10 & 11, 1979. Doubletree Inn, Scottsdale, AZ 85251.

MEMORIAL HOSPITAL

1201 S. 7th Ave., Phoenix, AZ 85036. Sponsor: Memorial Hospital. Approved for category 1 credit.

INTERNATIONAL CARDIOVASCULAR CONGRESS II

NON-INVASIVE DIAGNOSIS

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Non-invasive techniques for the diagnosis of heart, arterial and venous diseases have become one of the fastest growing areas of medical science. Congress II brings together a distinguished international faculty and leading experts in a program of 88 scientific papers covering current techniques, instrumentation and results from leading centers in the United States, Canada, Europe, South America and Japan. All presentations will be in English.

TOPICS TO BE COVERED

I. Cerebrovascular Disease
II. Peripheral Vascular Arterial Disease
III. Peripheral Vascular Venous Disease
IV. Coronary Heart Disease
V. Valvular Heart Disease
VI. Congenital Heart Disease

Scientific sessions will include discussions on the use of Doppler, Stress Testing, Oculoplethysmography, Carotid Phonoangiography, Impedance Plethysmography, Vectorcardiography, Real Time Imaging, Echocardiography, Ultrasound Scanning, and other non-invasive diagnostic techniques.

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J. Gundersen, M.D.
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Bethesda, MD

J. Keutel, M.D.
Bonn, West Germany

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Seattle, WA

Louis Evan Teichholz, M.D.
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H. Brownell Wheeler, M.D.
Worcester; MA

James S. T. Yao, M.D.
Chicago, IL

Program supported in part by Educational Grants from the Arizona Heart Institute Foundation and Marion Laboratories, Inc.

REGISTRATION:

Registration is open to physicians in all fields of medicine interested in non-invasive cardiovascular diagnosis. Internists, cardiologists, cardiac and vascular surgeons, family physicians, and other specialty groups will benefit from this international symposium on the state of the art.

FEES

Physicians: $200 *If fee paid in full by Jan. 1, 1979 - $150*

Residents, Interns, and Technicians: $100 *If fee paid in full by Jan. 1, 1979 - $75*

Registration fee includes lunches.

ACCREDITATION:

AMA

As an organization accredited for continuing medical education, the Arizona Heart Institute certifies that this continuing medical education activity meets the criteria for 17 credit hours in Category I of the Physician's Recognition Award of the American Medical Association.

AAFP

This Program is acceptable for 17 Elective hours by the American Academy of Family Physicians.

For registration information or information on hotel accommodations, write to:

ARIZONA HEART INSTITUTE/ INTERNATIONAL CARDIOVASCULAR CONGRESS II
P.O. Box 10,000 Phoenix, Arizona 85064

Monthly Medical Education Seminar
Third Monday, 6:30 p.m., Kiva Conference Room. Contact: George Scharf, M.D.

Tumor Board Conference
Every Friday at Noon, Kiva Conference Room. Contact: Howard Kimball, M.D.

SCOTTSDALE MEMORIAL HOSPITAL

7300 E. 4th St., Scottsdale, AZ 85251. Sponsor: Scottsdale Memorial Hospital. Contact: W.S. Williams, M.D., Director of Medical Education.

Clinical Pathological Conference
4th Monday, monthly, 12:45 p.m.

Family Practice Conference
1st Monday, monthly, 12:45 p.m.

Medical Grand Rounds
3rd Monday, monthly, 12:45 p.m.

Morbidity & Mortality Conference
2nd Monday, monthly, 12:45 p.m.

ST. MARY'S HOSPITAL & HEALTH CENTER

1601 West St. Mary's Rd., Tucson, AZ 85703. Sponsor: St. Mary's Hospital & Health Center. Contact: see below.

Cardiology Conference
Every Friday 8-9 a.m., Century Room A. Contact: Anthony L. Forte, M.D.

Monthly Specialty Conference of the Department of Surgery
First Monday, monthly, 7:30 a.m., Century Room A. Contact: Medical Staff Office. Approved for 1 hour of category 1 credit.

Grand Rounds: Medical, Surgical, Family Practice, Pathology, Radiology
Weekly, Thursday, 7-8:30 a.m. Contact: Richard A. Silver, M.D. Approved for 1 hour category 1 credit.

U OF A HEALTH SCIENCES CENTER

Tucson, AZ 85724. Sponsor: U of A College of Medicine. Contact: See below. Approved for category 1 credit.

Clinical Immunology, Allergy & Rheumatology Rounds
Every Friday, Noon-1, p.m. Contact: John Boyer, M.D., Dept. of Internal Medicine.

Cerebrovascular Disease Conference
Mondays, 5-6 p.m., weekly, Room 5505. Contact: Wesley Moore, M.D., Depts. of Surgery, Neurology & Radiology.

Dean's Clinical Rounds
October 18, 1978, Main Auditorium, UAHSC. Contact: Louis J. Kettel, M.D.

Endocrinology Seminar
Every Thursday, Noon-1 p.m., 1st, 3rd & 5th Thursday, Room N318, VA Hospital. 2nd & 4th Thursday, Room 6505, Tucson Medical Center. Contact: Dept. of Internal Medicine.

Hematology-Oncology Clinical Conference
Every Tuesday, Noon-1 p.m., 1st, 3rd & 5th Tuesdays, Room 6505, Tucson Medical Center. 2nd & 4th Tuesdays, Room N318, VA Hospital. Contact: Sidney Salmon, M.D., Dept. of Internal Medicine.

Joint Thyroid Clinic Conference
1st & 3rd Wednesdays of every month. AHSC, Rm. 6505. Contact: Sidney Werner, M.D., Dept. of Internal Medicine/ Endocrinology Section.

Medical Grand Rounds
Every Wed., Noon-1 p.m., 1st, 3rd & 5th Wed., Staff Conf. Room, VA Hospital. 2nd & 4th Wed., Room 5403, UAHSC. Contact: Jay Smith, M.D., Dept of Internal Medicine.

Nuclear Medicine
Thursday, 7:30 a.m., Radiology Conf. Room, UAHSC. Contact: Irwin M. Freundlich, M.D., Dept of Diagnostic Radiology.

Neurology Grand Rounds
Every Friday, Noon, 1st, 3rd & 5th Fridays, UAHSC, Room 7505. 2nd & 4th Fridays, VA Hospital. Contact: William A. Sibley, M.D., Dept. of Neurology.

Neuropathology Review Conference
Thursdays, 8:30 a.m., Room 5120, UAHSC. Contact: Peter C. Johnson, M.D.

Neurosciences Seminar
Every Friday, 7:30 a.m., UAHSC, Room 7505. Contact: Colin R. Bamford, M.D., or Jose F. Laguna, M.D., Dept. of Neurology.

Pathology Seminar
Friday, 4:30-5:30 p.m., Room 5120, UAHSC. Contact: Kenneth Ryan, M.D., Dept. of Pathology.

Tucson Pathologist Conference
First Monday of the month, 7:30-9 p.m. Rotation between Tucson Pathology Conf Rooms. Contact: Merel Clard, M.D., Tucson Pathologists.

Pediatric Grand Rounds
Every Tuesday, 12:30-1:30 p.m. Alternates between Tucson Medical Center & UAHSC. Contact: Hugh Thompson, M.D., Dept. of Pediatrics.

Problem Case Workshop
3rd Monday of each month, 7:30 a.m., Room 4410, UAHSC. Contact: H.E. Cross, M.D., Ph.D., Div. of Ophthalmology.

Psychiatric Grand Rounds
Every Wednesday, Sept. to May 4, 5:30 p.m., Room 8403 UAHSC. Contact: Alan Levenson, M.D., Dept. of Psychiatry.

Chest Radiology
Monday, 5-6 p.m., weekly, Room 1535F, UAHSC. Contact: Irwin M. Freundlich, M.D., Dept. of Radiology.

Gastrointestinal Radiology
Mondays, 7:30 a.m., weekly except for summer months. Contact: Irwin M. Freundlich, M.D., Dept. of Radiology.

Radiation Oncology Planning Conference
Friday, weekly, 8:30-10 a.m., UAHSC, Room 0655. Contact: Robert S. Heusinkveld, M.D., Radiation Oncology Section.

Radiology-Rheumatology Conference
Thursday, 8 a.m., UAHSC, Library Room 1535C. Contact: Irwin M. Freundlich, M.D., Dept. of Radiology.

Vascular Radiology
January-June 1978, 7:30 -8:30 a.m., every Friday. Contact: Irwin M. Freundlich, M.D., Dept. of Radiology.

Radiology Interesting Case Conference
Thursday, Noon, VA Hospital. Contact: Irwin M. Freundlich, M.D., Dept. of Radiology.

Resident's Conference
Wednesday, weekly 5-6 p.m., Diag. Radiology Conf. Room. Contact: Irwin M. Freundlich, M.D., Dept of Radiology.

Trauma Conference
Every Thursday, 4-5 p.m. UAHSC. Room 5505. Contact: Martin Silverstein, M.D., Dept. of Surgery.

Grand Ward Rounds—Trauma
Every Tuesday, 8 a.m., UAHSC. Contact:

Martin Silverstein, Surgery Dept., Trauma Section.

Monthly Meeting Tucson Ultrasonography Group
First Wednesday of month, 4:30-5:30 p.m., UAHSC. Contact: Irwin M. Freundlich, M.D.

Tucson Urological Society Scientific Meeting
Monthly. Contact: George W. Drach, M.D., Depts of Surgery & Urology.

General Urology Conference
Tuesday, 5-6 p.m. Thursday, Noon-1:30 p.m., UAHSC Meeting Rooms & VA Hospital. Contact: George W. Drach, M.D., Dept. of Surgery/Urology Section.

VETERANS ADMINISTRATION HOSPITAL

7th Street and Indian School Rd., Phoenix, AZ 85012. Sponsor: VA Hospital. Contact: Jasper L. McPhail, M.D. Approved for category 1 credit.

Academic Surgery Conference
Each Thursday — 2 p.m. — C435
Dr. Cannon, Ext. 493.

Cardiology Conference
2nd Thursday — 1 p.m. — T5
Dr. Habibzadeh, Ext. 348.

Cancer Symposium
Each Wednesday — 1 p.m. — T5
Dr. Berkley, Ext. 419.

Clinical Conference
4th Thursday of 3rd Month
(Mar., Jun., Sept., & Dec.)
1 p.m. — T5
Dr. Likos, Ext. 623.

Dermatology Conference
1st, 2nd, & 3rd Wednesday
(usually, but is subject to change)
10 a.m. — C118
Dr. Roberts, Ext. 426.

G.I. Radiology Clinical Correlation Conference
1st & 3rd Monday — 1 p.m. — C435
Dr. Sanowski, Ext. 618.

G.I. Grand Rounds
Each Tuesday — 1 p.m. — T5
(4th Thursday with U of A Consultants)
Dr. Sanowski, Ext. 618.

Medical Service Grand Rounds
Each Friday — 11 a.m. — T5
Dr. Zeller, Ext. 272.

Medical-Surgical Chest Conference
1st and 3rd Thursday — 1 p.m. — T5
Dr. Chowdhury, Ext. 388.

Medical-Surgical G.I. Conference
1st & 3rd Friday — 2 p.m. — 2128
Dr. Sanowski, Ext. 618.

Surgery Grand Rounds
Thursday — 3 p.m. Rm. C-435.

Surgery-Pathology Conference
Each Thursday — 2 p.m. — 2128
Dr. Cannon, Ext. 493, &
Dr. Likos, Ext. 623.

Urology-Pathology Conference
Each Wednesday — 7 a.m. — 2128
Dr. Likos, Ext. 623, &
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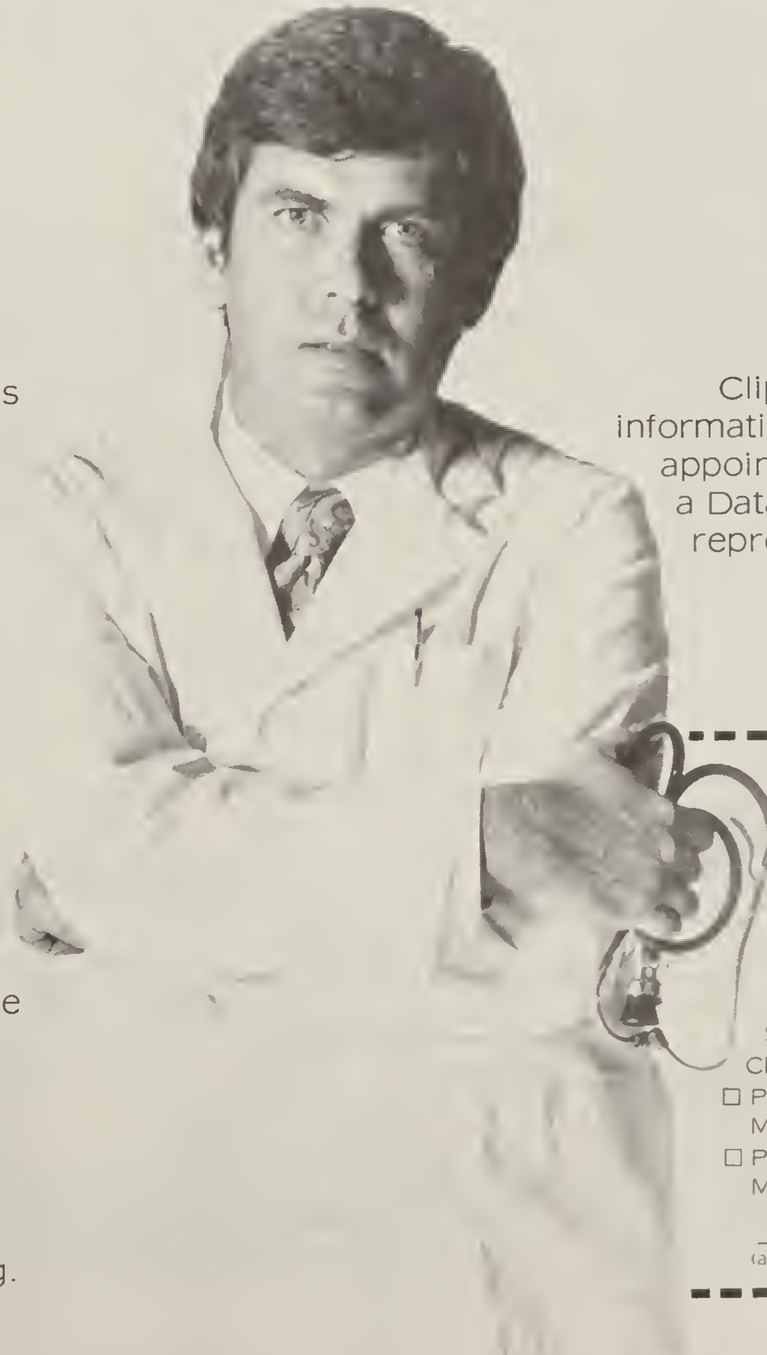

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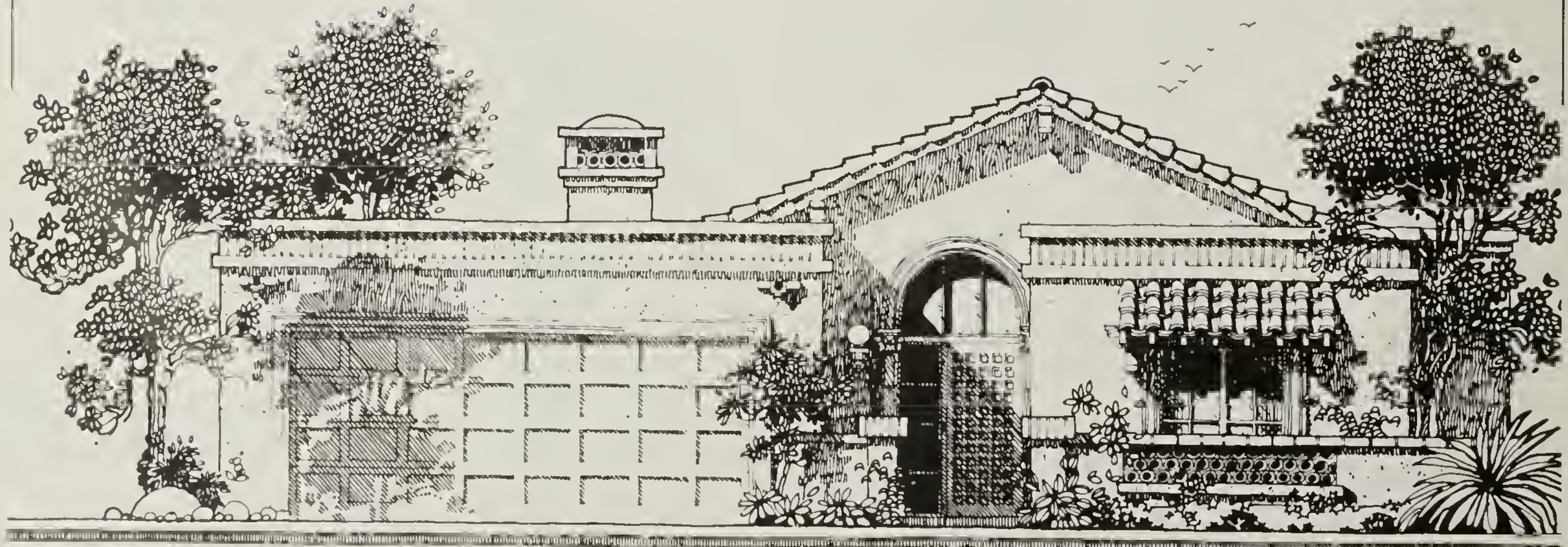

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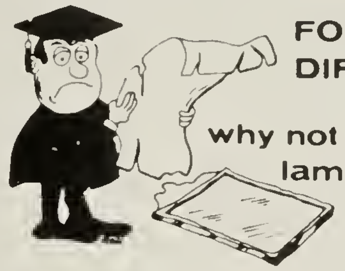

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